***DRAFT* AGENDA**

220th ENGINEERS CANADA BOARD MEETING

May 26, 2023 | 8:30am – 4:30pm AST

Hybrid delivery: Halifax Marriott Harbourfront, Halifax NS | Zoom

Reference materials: Board Policy Manual | Bylaw | Corporate Risk Profile | Strategic Plan

1.	**Opening**
	1.1 Call to order and approval of agenda – K. Baig (pages 1-4) *THAT the agenda be approved and the President be authorized to modify the order of discussion.*
	1.2 Declaration of conflict of interest (pages 5-6)
	1.3 Review of previous Board meeting – K. Baig (pages 7-8) a) Action item list b) Board attendance list
2.	**Executive reports**
	2.1 President's report – K. Baig (verbal)
	2.2 CEO update – G. McDonald (verbal/pages 9-50) a) Employee Engagement Survey results
	2.3 2022-2024 Strategic Plan report – G. McDonald a) Q1 Interim Strategic Performance Report (pages 51-62) b) SP 1.1 Investigate and validate the purpose and scope of accreditation update (slides)
	2.4 CEO Group report – L. Daborn (slides)
	2.5 Presidents Group report – D. Pothier (slides)
3.	**Consent agenda**
	Board members may request that an item be removed from the consent agenda for debate and deliberation. *THAT the consent agenda motions listed below (3.1 to 3.8) be approved in one motion.*
	3.1 Approval of minutes (pages 63-76) *a) THAT the minutes of the February 23, 2023 Board meeting be approved.* *b) THAT the minutes of the April 5, 2023 Board meeting be approved.*
	3.2 Update on the June 2022 Board Workshop post-meeting action plan – (pages 77-81)
	3.3 Consultation report – (pages 82-87) *THAT the 2022 consultation report be approved as distributed*
	3.4 List of partnership organizations – (pages 88-99)
	3.5 Update on the 50-30 Challenge – (pages 100-102)
	3.6 National Position Statements (pages 103-116) *THAT the following new National Position Statements be approved:* *a) Engineering a Sustainable Future: Role of Engineers in Helping Canada Achieve Net-Zero Emissions by 2050* *b) Professional Practice in Biomedical Engineering* *THAT the following updated National Position Statements be approved:* *a) Federal Regulations of Small Fishing Vessel Design*
	3.7 CEAB appointments (pages 117-119) *THAT the following CEAB appointments be approved for the period July 1, 2023 to June 30, 2026:* • *Pierre Bourque, member-at-large (second term)* • *Mrinal Mandal, representative for Alberta (second term)* • *Julius Pataky, representative for British Columbia (third term)* • *Tara Zrymiak, representative for Manitoba and Saskatchewan (third term)* • *Jason Foster, member-at-large (new member)* • *Michael Roach, member-at-large (new member)*

	3.8 CEQB appointments (pages 120-122) *THAT the following CEQB appointments be approved for the period July 1, 2023 to June 30, 2026:* • Anil Gupta, representative for Alberta (second term) • Adam Wallace, representative for Northern region (new member) • Farzad Rayengani, representative for Ontario (new member) • Carol MacQuarrie, member-at-large (new member)
4.	**Board business/required decisions**
	4.1 Corporate Risk Profile – A. Arenja (pages 123-153)
	4.2 CEQB products – M.A. Hodges (attachment pages 154-287) *THAT the Board, on recommendation of the CEQB, approve the following products:* *a) New Guideline for engineers and engineering firms on Indigenous consultation and engagement (public distribution)* *b) Feasibility study on alternative methods of academic assessment for non-CEAB applicants (members-only distribution)* *c) Revised Guideline on good character (public distribution)*
	4.3 Observers at Board meetings – A. English (pages 288-289) *1. THAT the Board, on recommendation of the Governance Committee approve engaging an external governance expert to advise on the roles of observers and their participation and attendance at Board meetings. This review should be conducted within one year.* *2. THAT the Board, on recommendation of the Governance Committee, approve that the Board will include a review of the roles of observers and their participation and attendance at Board meetings as part of a larger governance review to be conducted as part of the 2025-29 Strategic Plan.*
	4.4 Board policy updates – A. English (pages 290-344) *THAT the Board, on recommendation of the Governance Committee, approve the following revised Board policies:* *i. 1.2 Guiding principles* *ii. 4.3 Code of conduct* *iii. 4.9 Role of the Presidents (President-Elect, President, and Past President); and 6.13 President-Elect nomination and election process* *iv. 6.9 Canadian Engineering Accreditation Board* *v. 6.10 Canadian Engineering Qualifications Board* *vi. 7.1 Board, committee, and other volunteer expenses*
	4.5 Board self-assessment report – M. Wrinch (pages 345-365)
5.	**Annual reports**
	5.1 CEAB and update on Engineering Deans Canada concerns – P. Klink (slides)
	5.2 CEQB – M.A. Hodges (slides)
	5.3 FAR Committee – A. Arenja (slides)
	5.4 Governance Committee – A. English (slides)
	5.5 HR Committee – M. Wrinch (slides)
	5.6 Strategic Planning Task Force – N. Hill (slides)
	5.7 Collaboration Task Force - C. Bellini (slides)
	5.8 Board's 30 by 30 Champion – T. Joseph (slides)
6.	**Annual updates from stakeholders**
	6.1 Engineering Deans Canada – S. Kresta (verbal update with supporting slides)
	6.2 Canadian Federation of Engineering Students – D. Lamont and C. Betancourt-Lee (verbal update with supporting slides)
7.	**Acclamation and appointments**

	7.1 Acclamation of the President-Elect – D. Chui (pages 366)
	7.2 Appointment of the 2023-2024 HR Committee – M. Wrinch (pages 367-368) *THAT the Board, on recommendation of the HR Committee, appoint the following Directors to the 2023-2024 HR Committee:* *a) Ann English* *b) Arjan Arenja* *c) Stormy Holmes, CEO Group Advisor, Nominated by CEO Group*
8.	**Next meetings**
	Board meetings
	• June 19, 2023 (Niagara-on-the-Lake, ON) • October 5, 2023 (Ottawa, ON) • December 4, 2023 (virtual) • March 1, 2024 (Ottawa, ON) • April 3, 2024 (Virtual) • May 24, 2024 (Winnipeg, MB)
	2023-2024 committee and task force meetings
	• HR Committee (2023-2024): May 27, 2023 (Halifax, NS) • All 2023-2024 committees and task forces: June 19, 2023 (Niagara-on-the-Lake, ON) • Strategic Planning Task Force: August 23, 2023 (virtual) • Strategic Planning Task Force: October 5, 2023 (Hybrid - Ottawa, ON / virtual) • Strategic Planning Task Force: December 5, 2023 (virtual)
9.	**In-camera sessions**
	9.1 Board Directors, Direct Reports, CEO Group Advisor, and staff *THAT the meeting move in-camera and be closed to the public at the recommendation of the Board. The attendees at the in-camera session shall include Board Directors, the Engineers Canada CEO, the chairs of the CEAB and CEQB, the CEO Group Advisor to the Board, the Secretary, the Manager, Governance and Board Services, the Director, Finance, and the Manager, Member Services.* • Affinity programs annual report – G. McDonald (supporting documents circulated separately)
	9.2 Board Directors and CEO *THAT the meeting move in-camera and be closed to the public at the recommendation of the Board. The attendees at the in-camera session shall include Board Directors, and the Engineers Canada CEO.*
	9.3 Board Directors only *THAT the meeting move in-camera and be closed to the public at the recommendation of the Board. The attendees at the in-camera session shall include Board Directors.* • *Meeting evaluation*
10.	**Closing** (motion not required if all business has been completed)

Board support document

Meeting norms

Virtual participation:

- Board members and Direct Reports are asked to "show up" to the meeting a few minutes early to test their audio and video connections and are encouraged to reach out to Boardsupport@engineerscanada.ca in advance if they anticipate any connection or technological issues.
- To increase meeting engagement and participation, Board members and Direct Reports are requested to turn on their cameras during the meeting, when possible. All participants will have control over their ability to mute their line upon joining the meeting. Participants are asked to self-mute when they are not speaking to minimize background noise. If a participant is muted by an organizer, this is because there was feedback on the line.
- Participants are asked to use the self-mute function and turn off their cameras, instead of leaving the meeting during all breaks. This will help minimize any technical issues and disruption upon re-connection.
- The "Raise hand" function is only to be used if a participant wishes to ask questions and/or make comments after presentations or during debate. Depending on the Zoom version, participants may find the 'Raise hand' button under "Reactions" or "Participants". Participants should reach out in "Chat" if they are not able to locate it.
- If a participant wishes to speak and have not been called upon or are unable to use the "Raise hand" function, they should say their name with an un-muted microphone and obtain permission from the Chair before speaking.
- The "Chat" function will only be monitored by the offsite AV personnel in respect of technical difficulties. Non-technical questions asked through the "Chat" function will not be answered during the meeting.

To conduct the meeting with reasonable time and fairness:

1. For all motions, the meeting chair will call for abstentions and negative votes from the Directors. Directors who do not state a negative vote or an abstention will be considered in favour of the motion. If, for whatever reason, Directors are unable to speak during the motion and feel their opinion was not heard, they should raise their hand, or reach out in "Chat" for technical support.
2. Wordsmithing of motion texts should be avoided as much as possible so that the meeting can stay on track. If the proposed motion and related decision is understood, the Board should move to a debate and discussion on the proposal and should not focus attention on perfecting the text.
3. Participants are asked to speak for a maximum of two (2) minutes at a time (a timer will be projected on the screen) and will be limited to two (2) chances to speak on any one issue or motion. An opportunity to speak a second time will be granted only after everyone has had a chance to speak. The meeting chair reserves the right to allow additional chances to speak, as necessary.
4. Restating or reiterating the same point is strongly discouraged.
5. In the virtual environment where meeting participants are not able to demonstrate their agreement by nodding, they are encouraged to use the "Reaction" buttons to identify their informal support of others' statements. A safe and respectful environment is encouraged at all times.
6. At the opening of the meeting, the meeting chair will announce which individual will be monitoring the show of hands. The chair will try to ensure that anyone with a raised hand has their point addressed.

Board support document

Conflicts of interest

Board members and members of Board committees have an ongoing obligation to identify and disclose actual, reasonably perceived, and potential conflicts of interest. These obligations are set out in case law and are also codified in statute, under the *Canada Not-for-profit Corporations Act* ("CNCA").

While not expressly defined in the CNCA, a conflict of interest is understood to comprise any situation where:

a) an individual's personal interests, or
b) those of a close friend, family member, business associate, corporation, or partnership in which the individual holds a significant interest, or a person to whom the individual owes an obligation, could influence their decisions and impair their ability to:
    i. act in the best interests of the corporation, or
    ii. represent the corporation fairly, impartially, and without bias.

Conflicts of interest exist if a Director's decision could be, or could appear to be, influenced. *It is not necessary that influence actually takes place.* In cases where Directors are in an actual, perceived, or potential conflict of interest, they are required to disclose the conflicting interest to the Board[1] or, in the case where membership approval is sought, to the members,[2] as well as abstain from voting.

Handling conflicts of interest

Directors may use the following checklist when faced with a situation in which they think they might have an actual, perceived, or potential conflict of interest.

Step 1 - Identify the matter or issue being considered and the potential conflicting situation in which you are involved.

E.g. There is an item before the Board requiring discussion and a decision that involves potential litigation between Engineers Canada and the Engineering Regulator with whom you are licensed. Whether or not you are in a conflict of interest is not automatic—it will depend upon the personal circumstances of each Director.

Step 2 – Assess whether a conflict of interest exists or may exist.

In assessing whether you have an actual, reasonably perceived or potential conflict of interest, it may be helpful to ask yourself the following questions:

- ☐ Would I, or anyone associated with me benefit from, or be detrimentally affected by my proposed decision or action?
- ☐ Could there be benefits for me in the future that could cast doubt on my objectivity?
- ☐ Do I have a current or previous personal, professional, or financial relationship or association of any significance with an interested party?

[1] Section 141(1) and (2) of the CNCA
[2] Section 141(9)(a) of the CNCA

- Would my reputation or that of a relative, friend, or associate stand to be enhanced or damaged because of the proposed decision or action?
- Do I or a relative, friend, or associate stand to gain or lose financially in some way?
- Do I hold any personal or professional views or biases that may lead others to reasonably conclude that I am not an appropriate person to deal with the matter?
- Have I made any promises or commitments in relation to the matter?
- Have I received a benefit or hospitality from someone who stands to gain or lose from my proposed decision or action?
- Am I a member of an association, club, or professional organization, or do I have particular ties and affiliations with organizations or individuals who stand to gain or lose by my proposed decision or action?
- Could this situation have an influence on any future employment opportunities outside my current duties?
- Could there be any other benefits or factors that could cast doubts on my objectivity?
- Am I confident of my ability to act impartially in the best interests of Engineers Canada?

What perceptions could others have?

- What assessment would a fair-minded member of the public make of the circumstances?
- Could my involvement on this matter cast doubt on my integrity or on Engineers Canada's integrity?
- If I saw someone else doing this, would I suspect that they have a conflict of interest?
- If I did participate in this action or decision, would I be happy if my colleagues and the public became aware of my involvement?
- How would I feel if my actions were highlighted in the media?

Step 3 – Is the duty to disclose triggered?

If, in assessing the situation, you determine that you are in an actual, potential, or reasonably perceived conflict of interest, your duty to disclose is triggered. Directors disclosing a conflict must make the disclosure at the meeting at which the proposed contract or transaction is first considered and should request to have the disclosure entered into the minutes of the meeting.[3]

Disclosure must be made of the nature and extent of the interest that you have in the contract or transaction (or proposed contract or transaction).[4] The limited case law dealing with the nature and scope of the disclosure required by a conflicted Director suggests that disclosure must make the other Directors fully informed of the real state of affairs (e.g. what your interest is and the extent of the interest).[5] It will rarely suffice to simply declare that you have a conflict of interest.

Step 4 – What next?

Subject to limited exceptions, the general rule is that a conflicted Director cannot vote on the approval of a proposed contract or transaction, even where their interest is adequately disclosed.[6] Further, as a best practice, they should leave the room and not participate in the salient part of the Board meeting.

3 Section 141(1) of the CNCA
4 Section 141(1) and 141(9)(b) of the CNCA
5 *Gray v. New Augarita Porcupine Mines Ltd.,* 1952 CarswellOnt 412 (Jud. Com. of Privy Coun.)
6 Section 141(5) of the CNCA

Engineers Canada Board of Directors action log

	Meeting date	Action	Responsible	Due date	Update
1.	February 23, 2023	Staff to consult with the regulators in advance of the May 2023 Board meeting on updating the National Position Statement "Federal Regulations of Small Fishing Vessel Design" to include environmental considerations.	Staff	May 26, 2023	Complete – The National Position Statement has been modified to incorporate environmental considerations and can be found under item 3.6.
2.	February 23, 2023	At its meeting in March, the Governance Committee will clarify the intention of section 4.3.4 Complaints process and refer any subsequent changes to Board policy 4.3 Code of Conduct to the Board when it meets in May 2023.	Governance Committee	May 26, 2023	Complete – The Governance Committee's recommendation can be found under item 4.4 Board policy updates.
3.	February 23, 2023	Staff to work with *tng* to update the Board self-assessment and individual Director assessment surveys to include in the preamble information about the confidential handling and retention period of the data collected.	Staff	May 26, 2023	Complete – The appropriate updates were made prior to the survey's circulation on February 27, 2023.
4.	February 23, 2023	Staff to advise *tng* to remove references to best efforts in question number 27 in the pre-circulated survey questions.	Staff	May 26, 2023	Complete – The appropriate updates were made prior to the survey's circulation on February 27, 2023.

Last updated: May 12, 2023	Alison Anderson	Arjan Arenja	Natasha Avila	Kathy Baig	Ernie Barber	Anne Baril	Maxime Belletête	Christian Bellini	Victor Benz	Danny Chui	Geoff Connolly	Crysta Cumming	Ann English	Nancy Hill	Sudhir Jha	Tim Joseph	Dawn Nedohin-Marek	Mario Rose	Darlene Spracklin-Reid	Marisa Sterling	Nicolas Turgeon	John Van der Put	Mike Wrinch
Board Meetings																							
June 20, Hybrid (Mont-Tremblant, QC)	✓	×	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
September 29, Hybrid (Ottawa, ON)	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
December 12, Virtual	✓	✓	×	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
February 23, Hybrid (Ottawa, ON)	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
April 5, Virtual	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Board on Board Leadership Program																							
Ongoing access	✓	✓	✓			✓/	✓/	✓/	✓	✓	✓	✓/	✓/	✓/	✓	✓	✓/	✓	✓	✓/	✓/	✓	✓
4 Seasons training																							
Ongoing access	✓	✓	✓	✓	✓		✓/	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CEAB																							
June 3, Hybrid (Ottawa)			✓							✓								✓					
September 18-19, Virtual				✓	✓					✓			✓					✓	✓	✓			
February 3-4, Virtual					✓					✓								✓	✓				
April 15, Virtual					×					✓								✓	✓				
CEQB																							
July 18, Virtual														✓					✓				
September 18-19, Hybrid, Vancouver, BC										✓				✓			✓		✓				
April 1-2, Hybrid, Ottawa, ON										✓				✓			×		✓				
FAR Committee																							
June 20, Hybrid (Mont-Tremblant, QC)		×					×		✓							✓							
August 10, Virtual		✓					✓		×							✓							
October 21, Virtual		✓					✓		✓							×							
December 14, Virtual		✓					✓		✓							✓							
March 1, Virtual		✓					✓		✓							×							
March 10, Virtual		✓					✓		×							×							
May 11, Virtual		✓					✓		✓							✓							
Governance Committee																							
June 20, Hybrid (Mont-Tremblant, QC)	✓					✓				✓			✓							✓			
September 21, Virtual	✓					✓				✓			✓										
November 16, Virtual	✓					✓				✓			✓										
March 8, Virtual	✓					✓				✓			✓					✓					
HR Committee																							
September 8, Virtual				✓						✓	✓			✓									✓
November 24, Virtual				×						×	✓			✓									✓
December 15, Virtual				✓						✓	✓			✓									✓
March 30, Virtual				×						✓	✓			✓									✓
April 4, 2023, Virtual				✓						✓	✓			✓									✓
Collaboration Task Force																							
June 20, Hybrid (Mont-Tremblant, QC)			✓					✓				✓	✓								✓		✓
July 7, Virtual			✓					✓				✓	✓								×		
September 12, Virtual			×					✓				✓	✓								×		
October 7, Virtual			✓					✓				✓	✓								×		
March 15, Virtual			×					✓				✓	✓								×		
Strategic Planning Task Force																							
June 20, Hybrid (Mont-Tremblant, QC)				✓						✓				✓		✓		✓	✓			✓	
July 26, Virtual				✓						✓				✓				✓	✓			✓	
December 11, Virtual				✓						✓				✓				×	×			✓	
February 22, Hybrid (Ottawa, ON)				×						✓				✓				✓	×			✓	
May 16, Virtual																							

Attendance Required	✓
Attendance Not Required / Completed	✓
Attendance for Partial Meeting / In progress	✓/
Attendance required, regrets	×
Not applicable	-

BRIEFING NOTE: For information

2022 Employee engagement survey results and work plan	2.2
Purpose:	To update the Board with the Engineers Canada employee engagement survey results and work plan.
Link to the strategic plan	Board responsibility: Hold itself, its directors, and its direct reports accountable
Prepared by:	Nicole Proulx, Director, Human Resources
Presented by:	Gerard McDonald, Chief Executive Officer

Background

- The survey was administered by TalentMap in October 2022.
- A total of 98% of staff participated in the survey, which is rare for an exercise of this type (the only person who didn't respond was on sick leave).
- Engineers Canada bested comparative industry benchmarks in most categories.
- Survey results were presented to the HR Committee at its meeting on March 30, 2023.

Status update

Results

- The overall results were quite positive, with very good ratings in a significant majority of categories.
- The overall engagement score for the organization has increased by 9 percentage points.
- Engineers Canada is in the top quartile of good employers based on TalentMap's benchmark data.
- 90% of Engineers Canada employees would recommend the organization to a friend and are satisfied with their employment.
- In January 2023, TalentMap presented results to the Senior Leadership Team (SLT) and to all staff.
- The SLT has committed to improvements in 3 key areas:
    - Employee Workload
    - Mental Health
    - Performance Management
- In its discussion of the survey results, the HR Committee discussed the following:
    - Engineers Canada's high employee satisfaction rate.
    - High fluidity in the current labour market, to which Engineers Canada was not immune.
    - The impact of the pandemic on work/life balance.
    - Opportunities to reduce staff workload by reducing reporting requirements.
    - Areas of improvement identified by SLT.

Next steps

- Identify areas of improvement in each category.
- Develop work plans for actions/timelines.
- Monitor and evaluate progress.
- Acknowledge and celebrate success.

Appendices

- **Appendix 1:** TalentMap Executive Report – January 2023 (English only)

Engineers Canada Executive Report

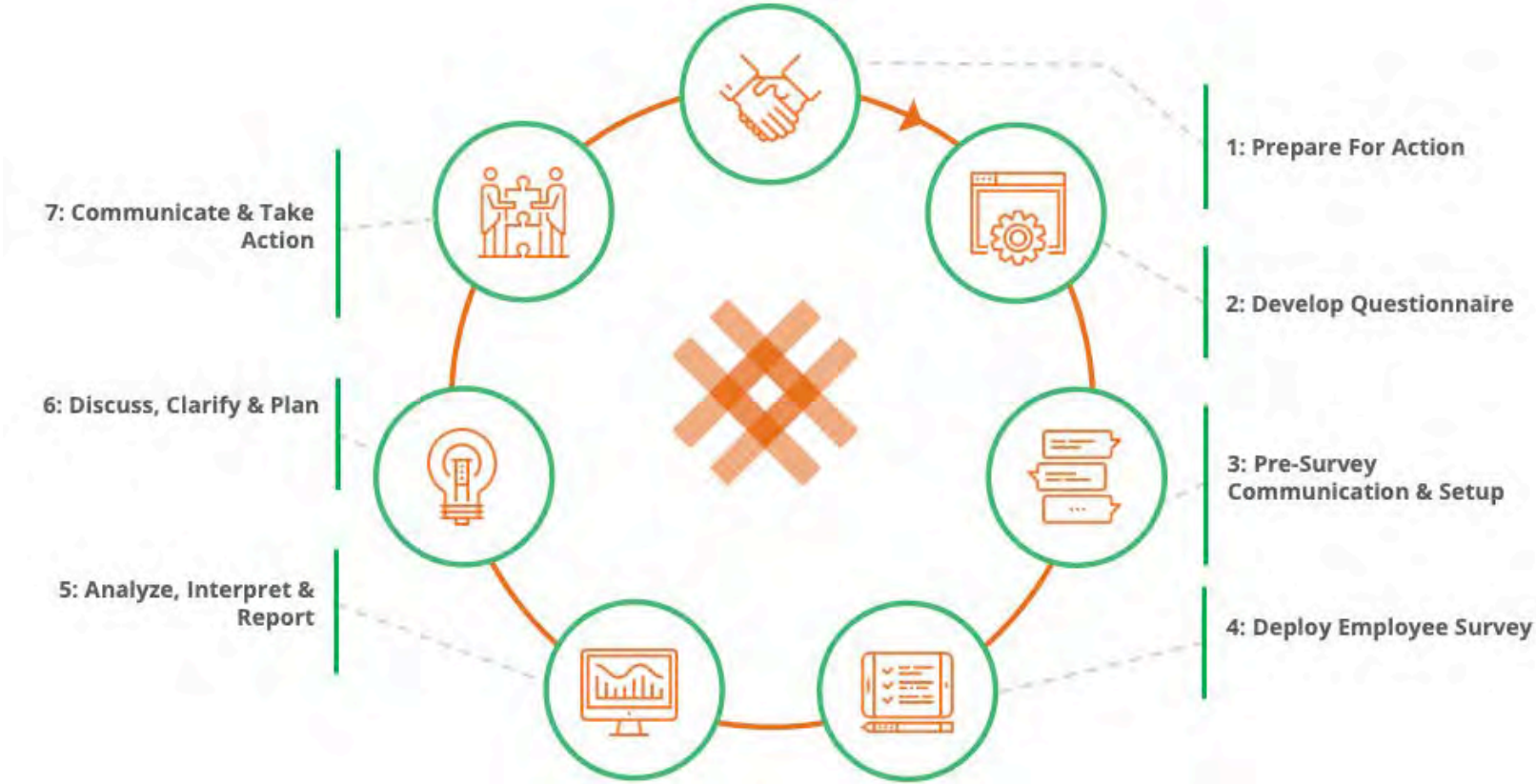
January 2023

www.TalentMap.com

Our Confidentiality Policy

No data or reports will be provided unless there are at least **five** respondents.

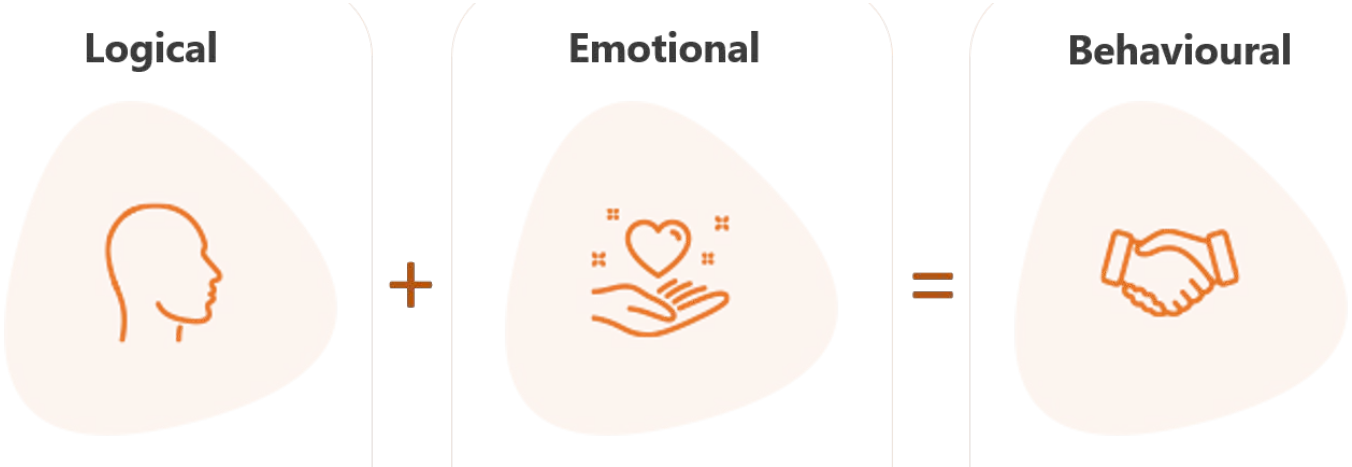
Your 7 Step Process



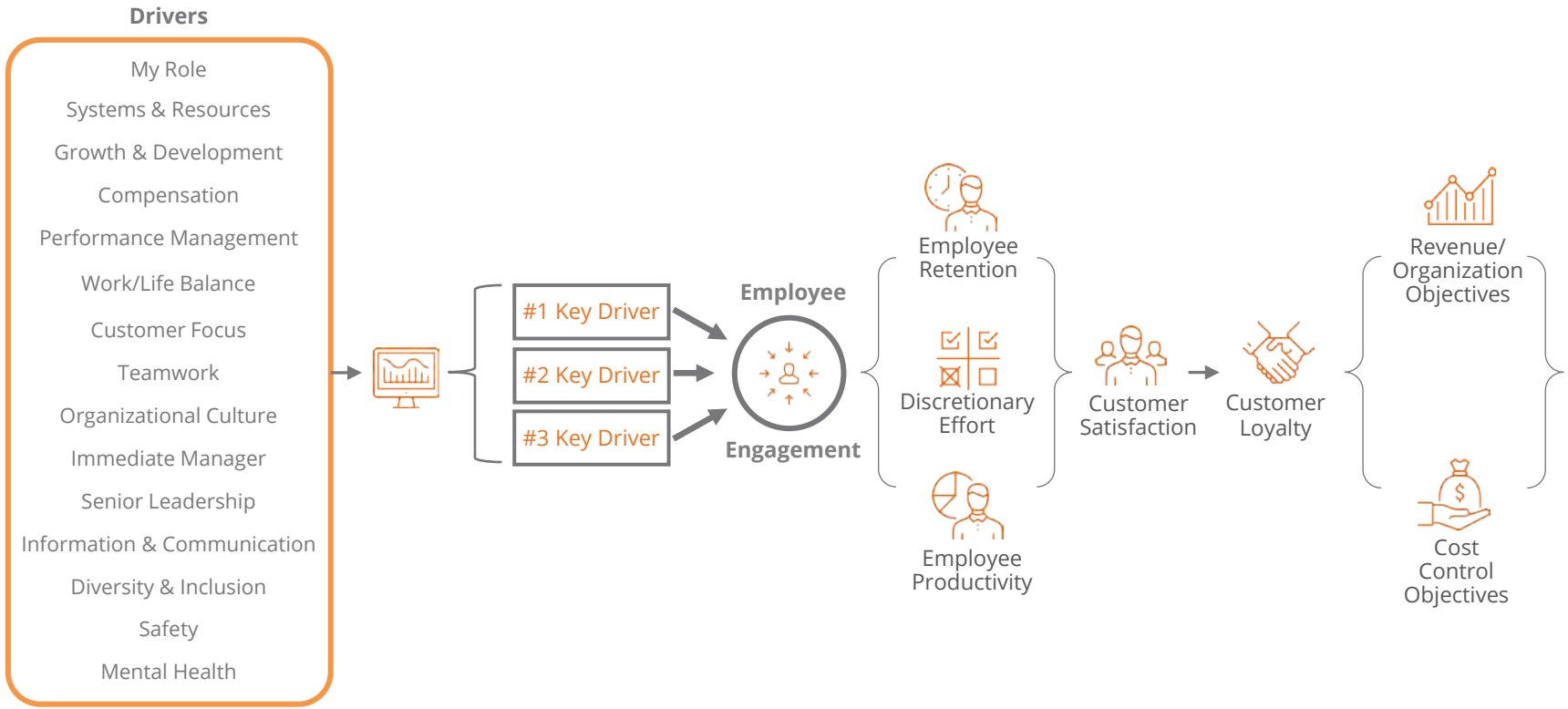
TALENTMAP

What is Employee Engagement?

An engaged employee is an **energized** employee who is more connected to the organization **intellectually**, **emotionally** and **behaviourally**.



Linking Engagement to Business Outcomes

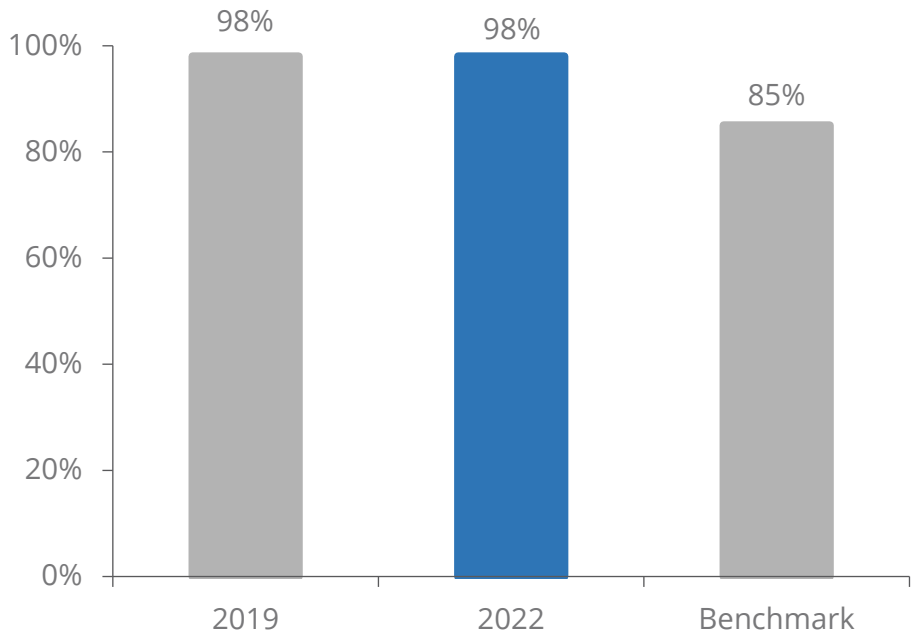


Survey Results

Response Rate

Your survey period: October 17th through to the 28th, 2022

n=49



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n = 49
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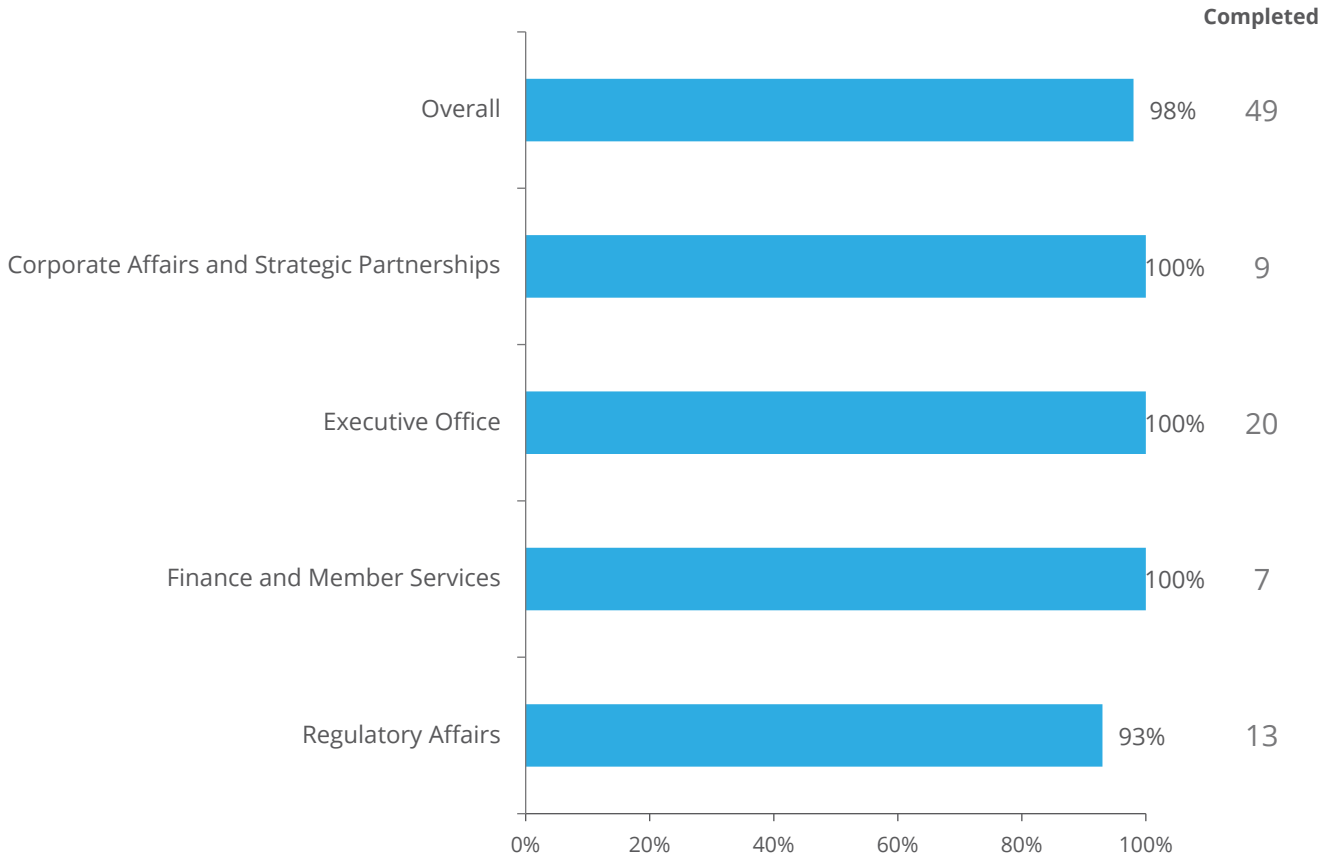
Response Rate by Department



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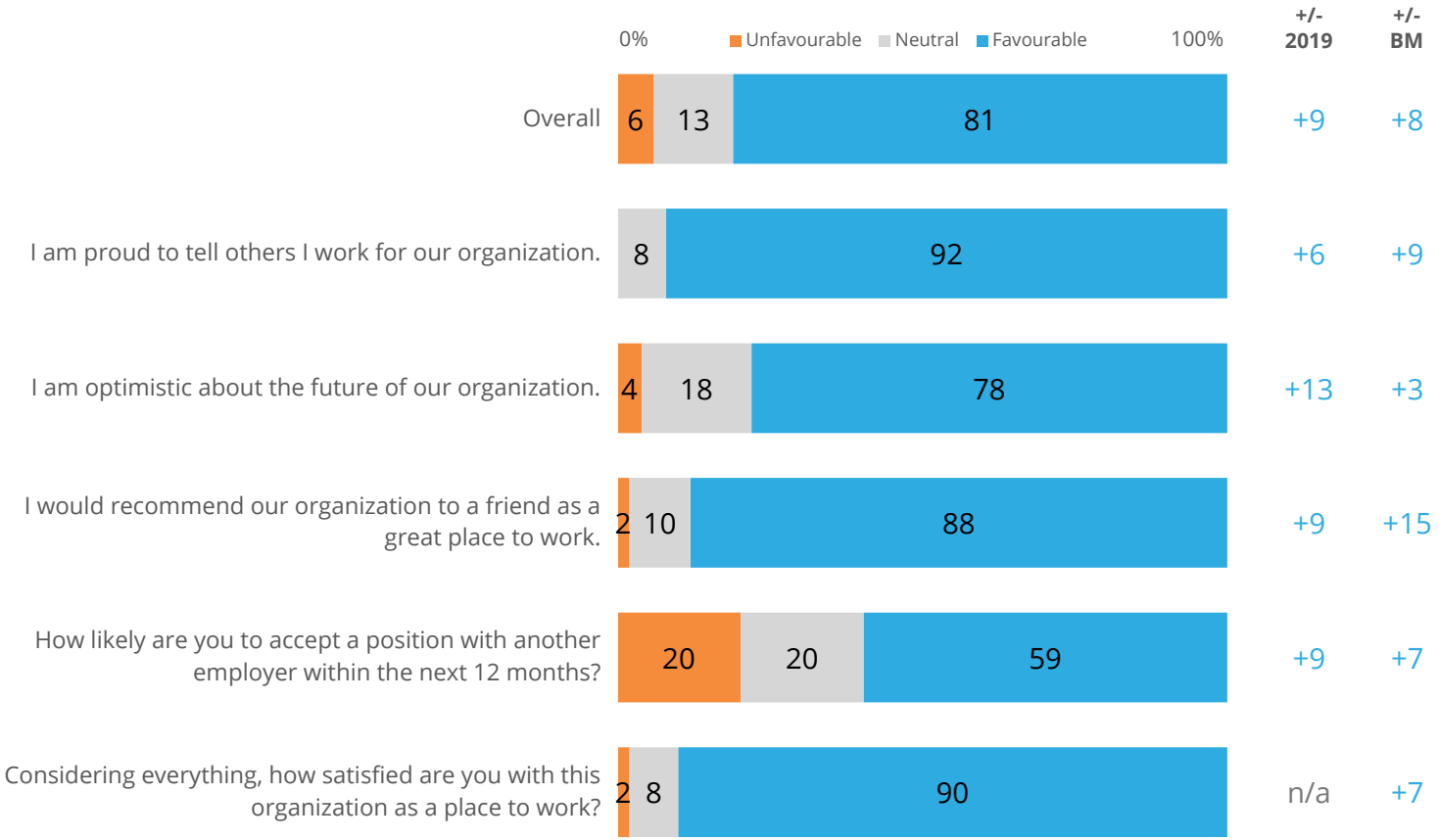
Organizational Engagement



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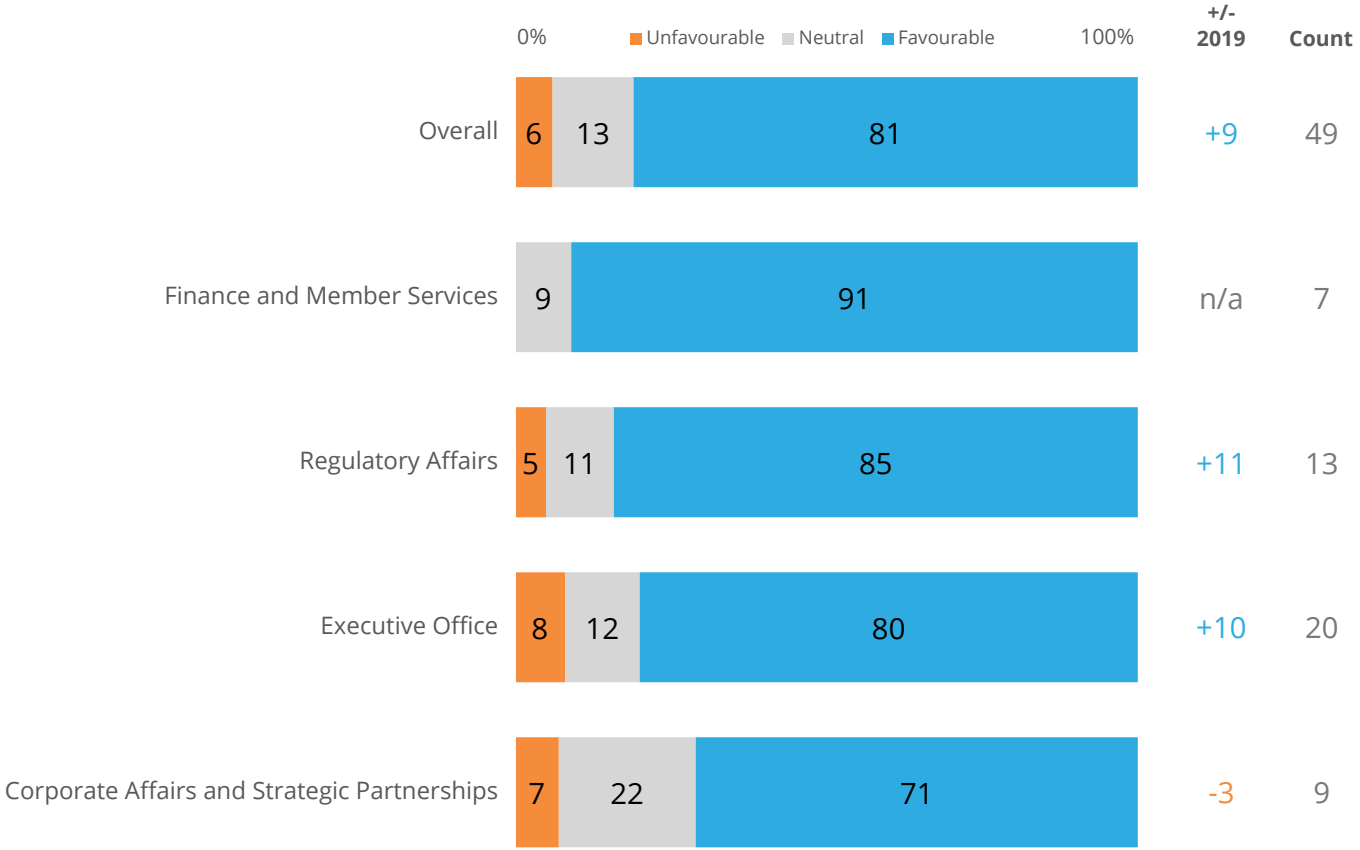
Organizational Engagement by Department



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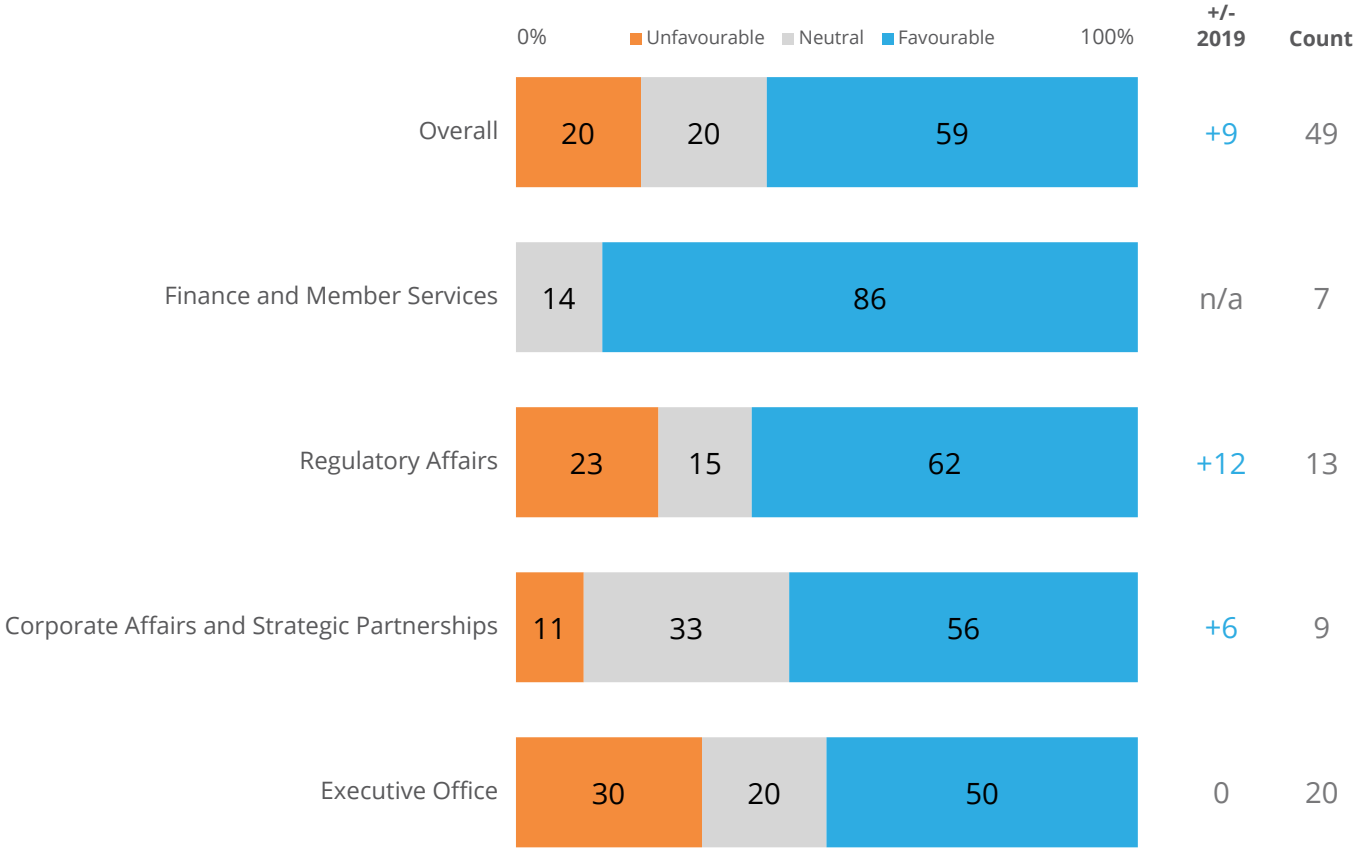
Intend to Stay by Department



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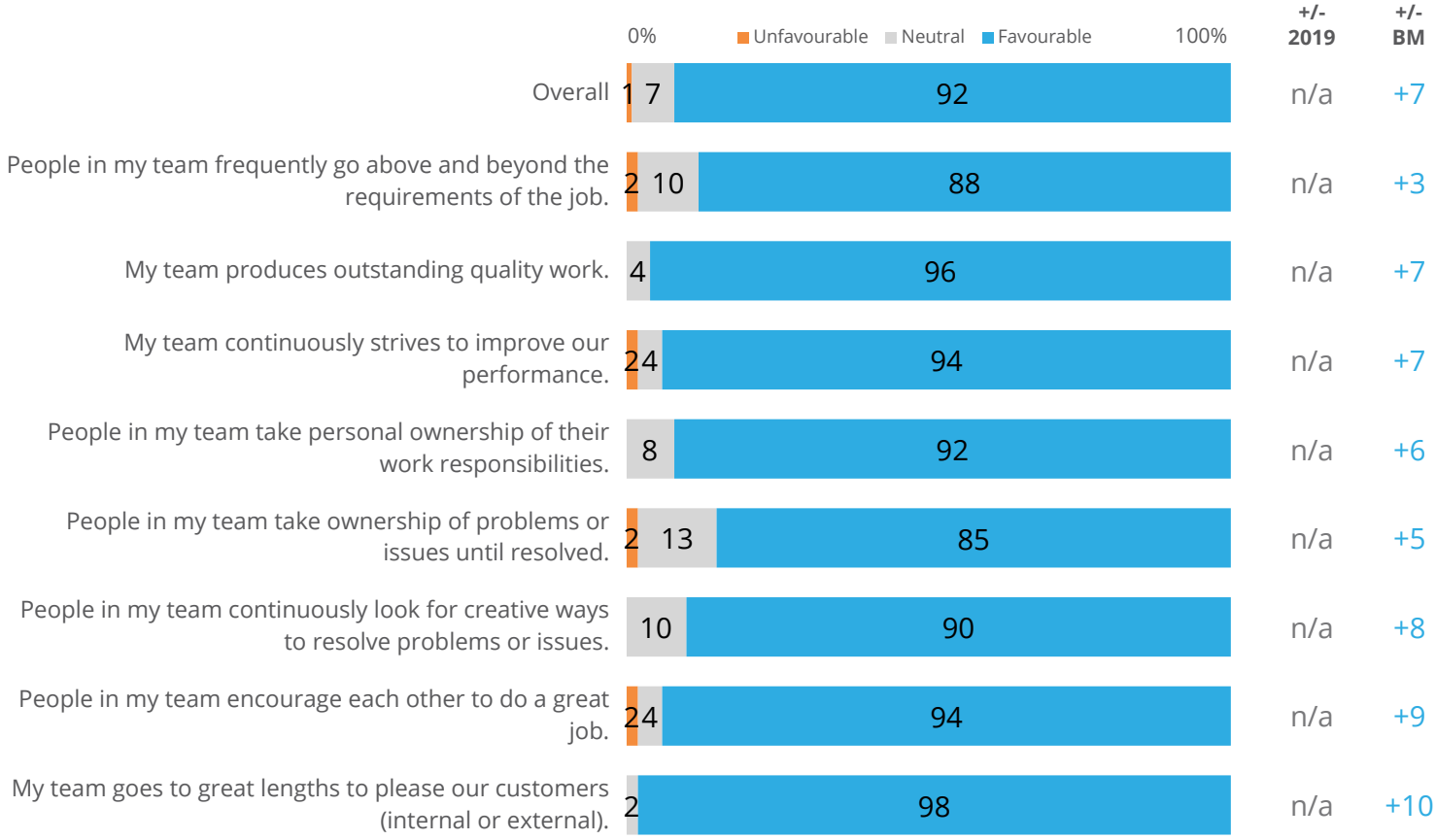
Data is rounded to the nearest whole number

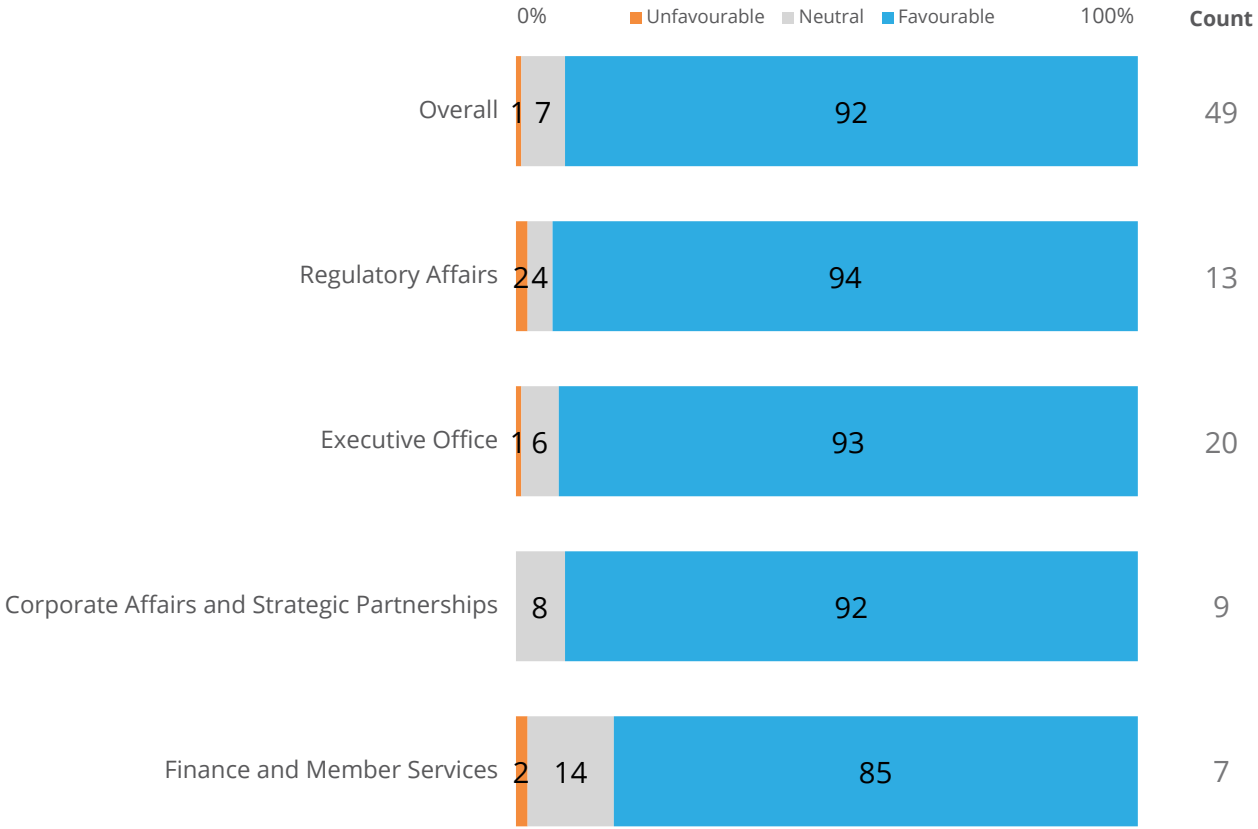
Team Engagement



TALENTMAP

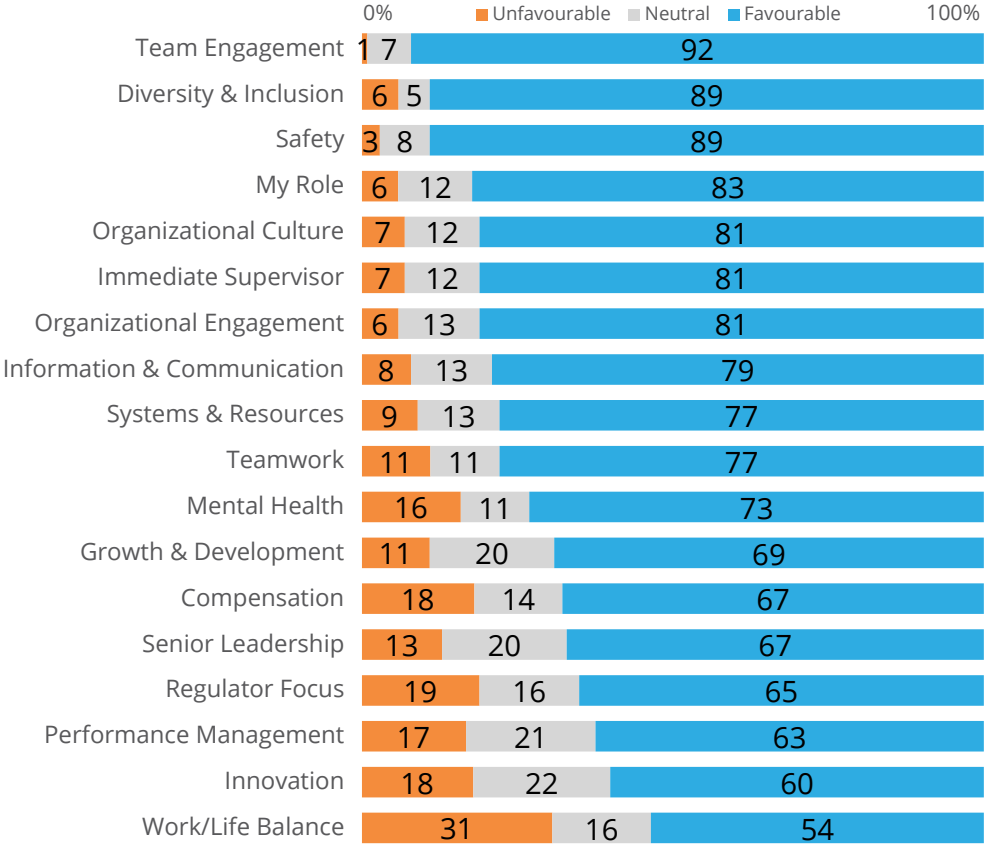
n = 49
Data is rounded to the nearest whole number

Team Engagement by Department



n = 49
Data is rounded to the nearest whole number

Overall Dimension Scores



	+/- 2019	+/- BM
Team Engagement	n/a	+7
Diversity & Inclusion	-7	+5
Safety	-7	+1
My Role	+6	-1
Organizational Culture	n/a	+7
Immediate Supervisor	+2	+2
Organizational Engagement	+9	+8
Information & Communication	+14	+17
Systems & Resources	-1	+1
Teamwork	+6	+7
Mental Health	-1	-1
Growth & Development	+18	+2
Compensation	-5	+13
Senior Leadership	+1	+2
Regulator Focus	-2	-6
Performance Management	+11	-6
Innovation	+2	-2
Work/Life Balance	-15	-6

TALENTMAP

n = 49
Data is rounded to the nearest whole number

Heatmap by Department

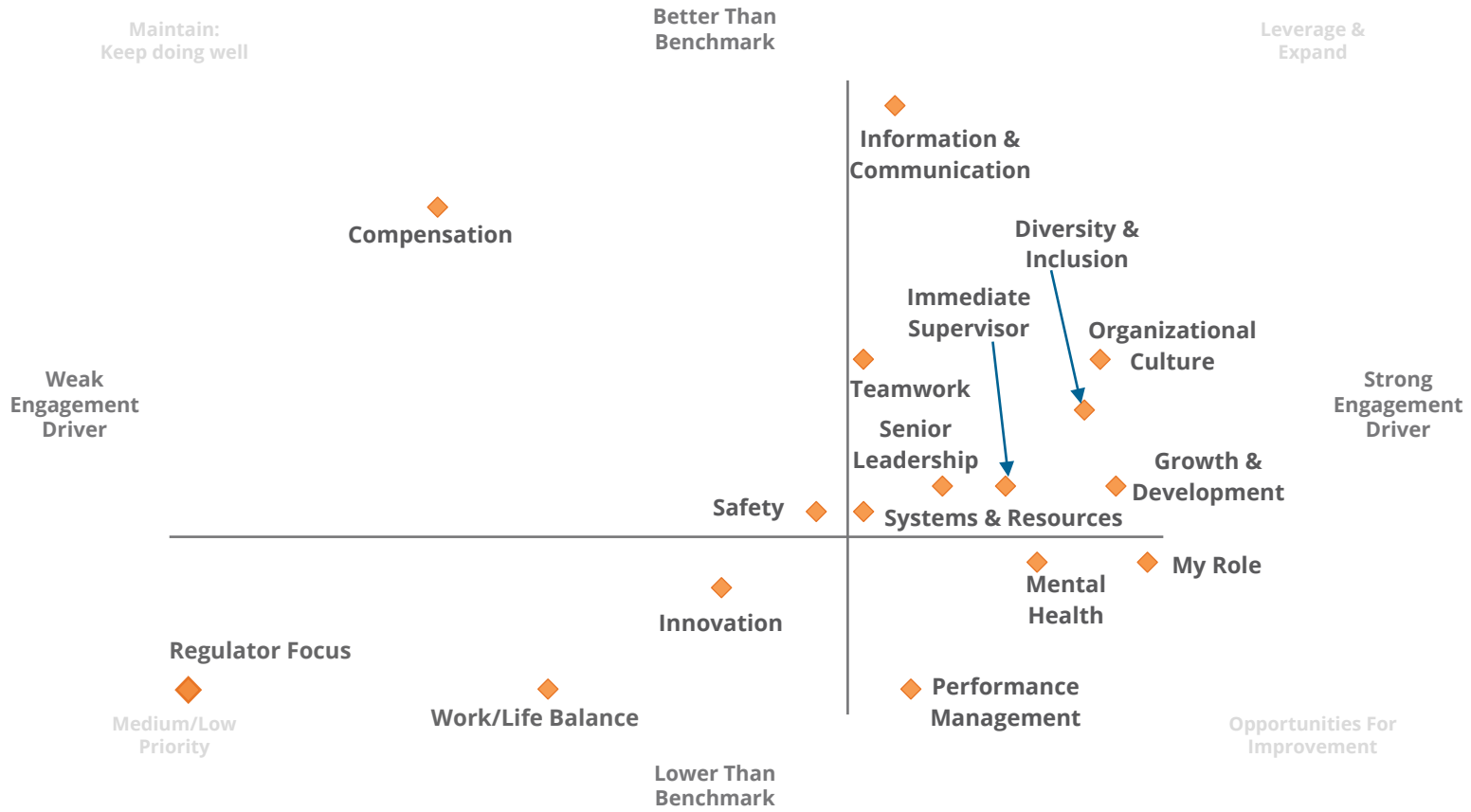
	Organization Overall	Corporate Affairs and Strategic Partnerships	Executive Office	Finance and Member Services	Regulatory Affairs
Responses	49	9	20	7	13
My Role	83%	-5	-4	17	0
Systems & Resources	77%	-1	-1	20	-8
Growth & Development	69%	-7	2	31	-13
Compensation	67%	11	-1	-6	-3
Performance Management	63%	-5	1	14	-6
Work/Life Balance	54%	13	-4	41	-26
Regulator Focus	65%	-16	3	10	1
Teamwork	77%	3	-5	7	2
Organizational Culture	81%	-7	2	7	-3
Innovation	60%	1	3	16	-16
Immediate Supervisor	81%	-2	-1	15	-2
Senior Leadership	67%	-3	-3	17	-3
Information & Communication	79%	2	-1	11	-7
Team Engagement	92%	0	1	-7	2
Diversity & Inclusion	89%	3	0	-7	2
Safety	89%	-5	0	1	2
Mental Health	73%	-5	5	2	-8
Organizational Engagement	81%	-10	-1	10	3

TALENTMAP

n = 49
Data is rounded to the nearest whole number

Prioritizing Opportunities

Key Strength & Opportunity Areas



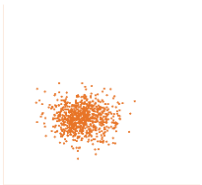
TALENTMAP

Key Driver Analysis

Perfect Correlation
r = 1

Strong Correlation
r ≥ .60

Moderate Correlation
r = .40 - .60



No Correlation
r = 0

Key Drivers	Org. Engagement	Team Engagement	Intend to Stay	% Favourable	+/- 2019	+/- Benchmark
My Role	**.70**		**.71**	83	+6	-1
Growth & Development	**.68**		**.62**	69	+18	+2
Organizational Culture	**.67**			81	n/a	+7
Diversity & Inclusion	**.66**			89	-7	+5
Immediate Supervisor			**.51**	81	+2	+2
Systems & Resources		**.42**		77	-1	+1
Teamwork		**.28**		77	+6	+7
Innovation		**.25**		60	+2	-2

The **strongest** drivers of each employee outcome are highlighted in **blue**.

TALENTMAP

n = 49
Strongest drivers are highlighted in blue

Drivers of Organization Engagement

Perfect Correlation
r = 1

Strong Correlation
r ≥ .6

Moderate Correlation
r = .4 - .6

No Correlation
r = 0

Survey Dimension	Correlation
My Role	**.70**
Growth & Development	**.68**
Organizational Culture	**.67**
Diversity & Inclusion	**.66**
Mental Health	.63
Immediate Supervisor	.61
Senior Leadership	.57
Performance Management	.55
Information & Communication	.54
Systems & Resources	.52
Teamwork	.52
Safety	.49
Innovation	.43
Work/Life Balance	.32
Compensation	.25
Regulator Focus	.09

TALENTMAP

n = 49
Strongest drivers are highlighted in blue

Drivers of Team Engagement

Perfect Correlation
r = 1

Strong Correlation
r ≥ .6

Moderate Correlation
r = .4 - .6

No Correlation
r = 0

Survey Dimension	Correlation
Systems & Resources	**.42**
Teamwork	**.28**
Innovation	**.25**
Immediate Supervisor	.18
Mental Health	.12
Organizational Culture	.11
Performance Management	.11
Regulator Focus	.08
Compensation	.08
Senior Leadership	.08
Growth & Development	.06
Safety	.05
Information & Communication	.04
Diversity & Inclusion	.04
Work/Life Balance	-.04
My Role	-.09

TALENTMAP

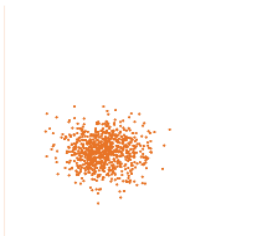
n = 49
Strongest drivers are highlighted in blue

Drivers of Intend to Stay

Perfect Correlation
r = 1

Strong Correlation
r ≥ .6

Moderate Correlation
r = .4 - .6

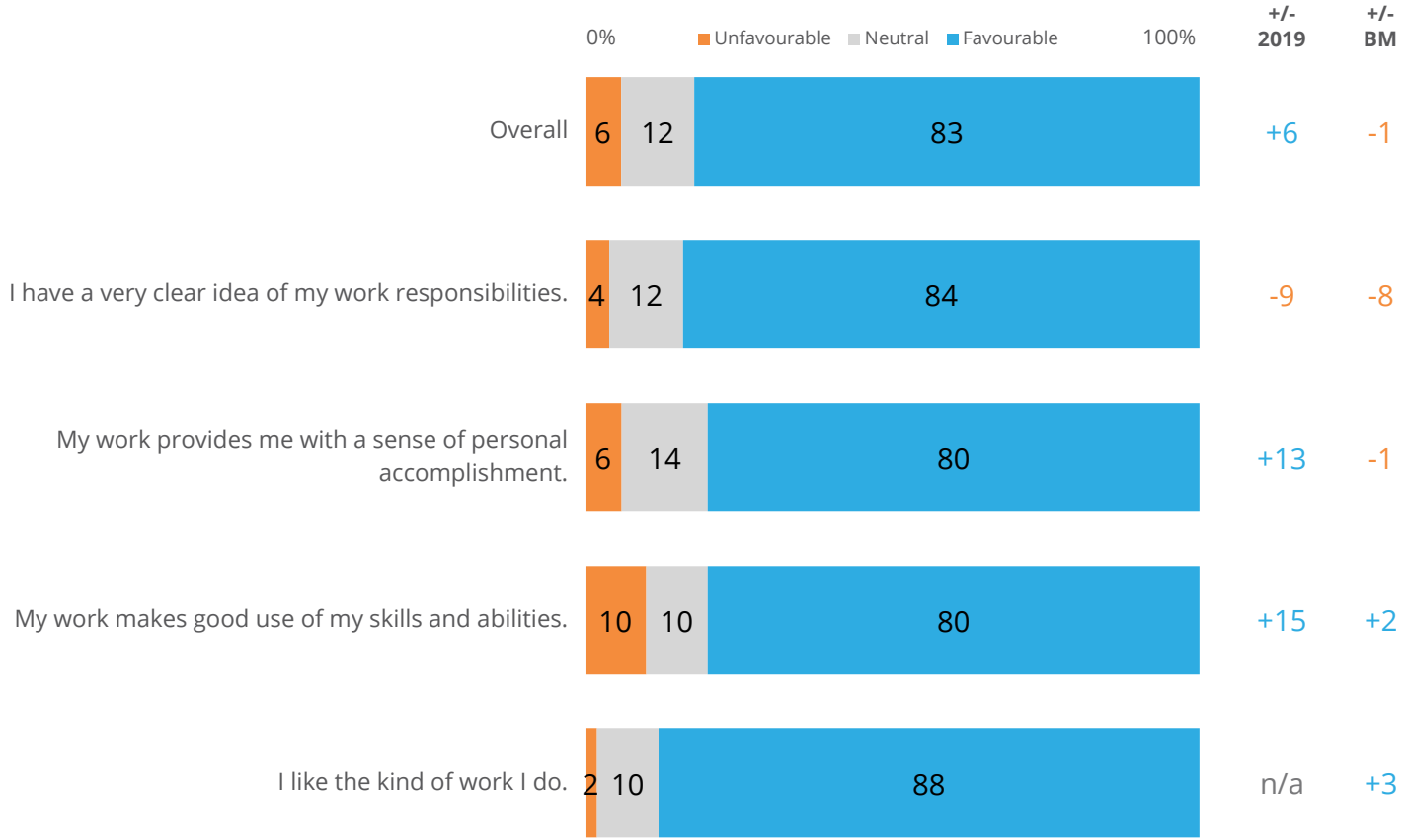


No Correlation
r = 0

Survey Dimension	Correlation
My Role	**.71**
Growth & Development	**.62**
Immediate Supervisor	**.51**
Diversity & Inclusion	.48
Teamwork	.44
Organizational Culture	.43
Compensation	.39
Information & Communication	.34
Mental Health	.34
Performance Management	.32
Systems & Resources	.30
Innovation	.30
Work/Life Balance	.30
Senior Leadership	.29
Safety	.20
Regulator Focus	.09

n = 49
Strongest drivers are highlighted in blue

My Role (Driver #1)



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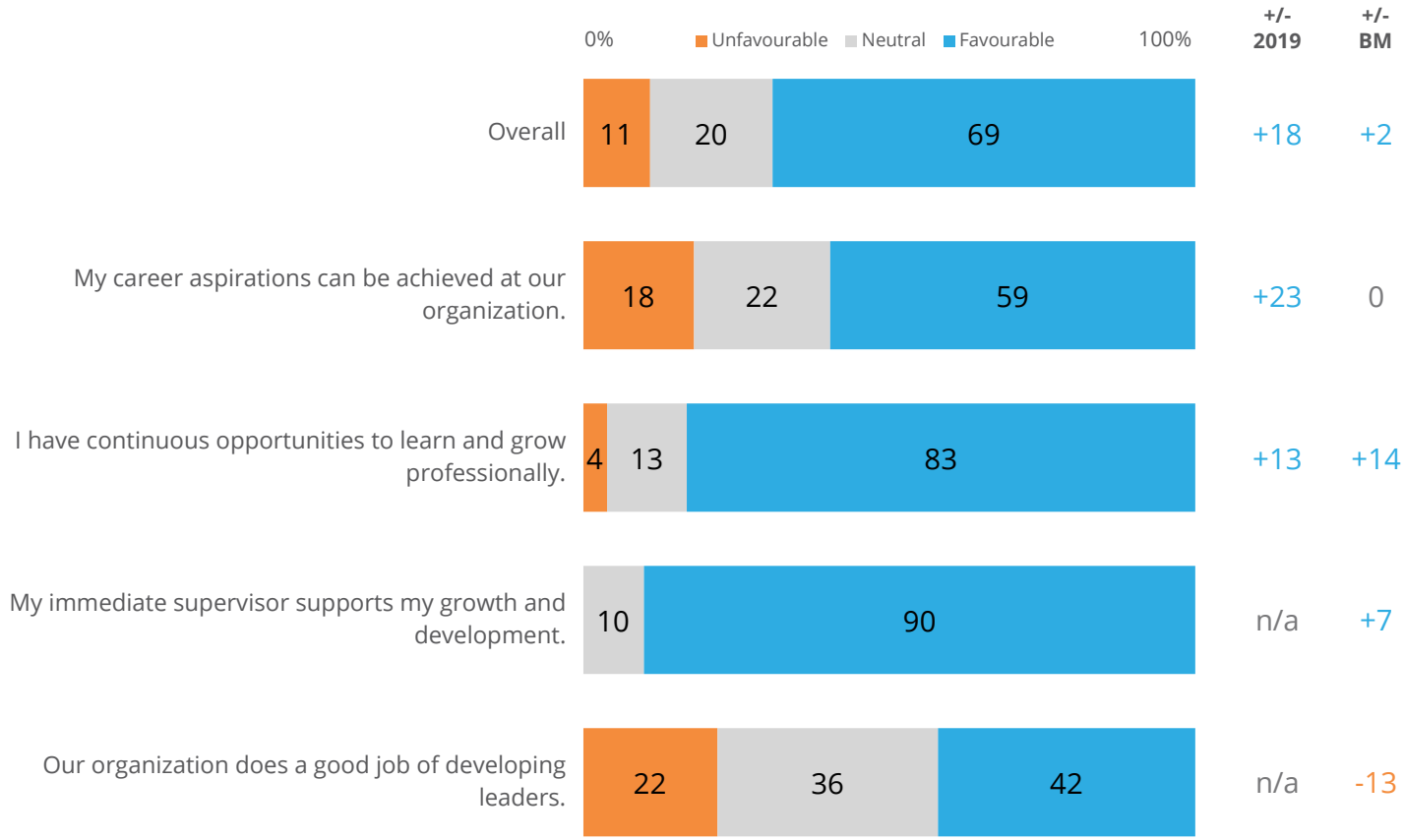
Data is rounded to the nearest whole number

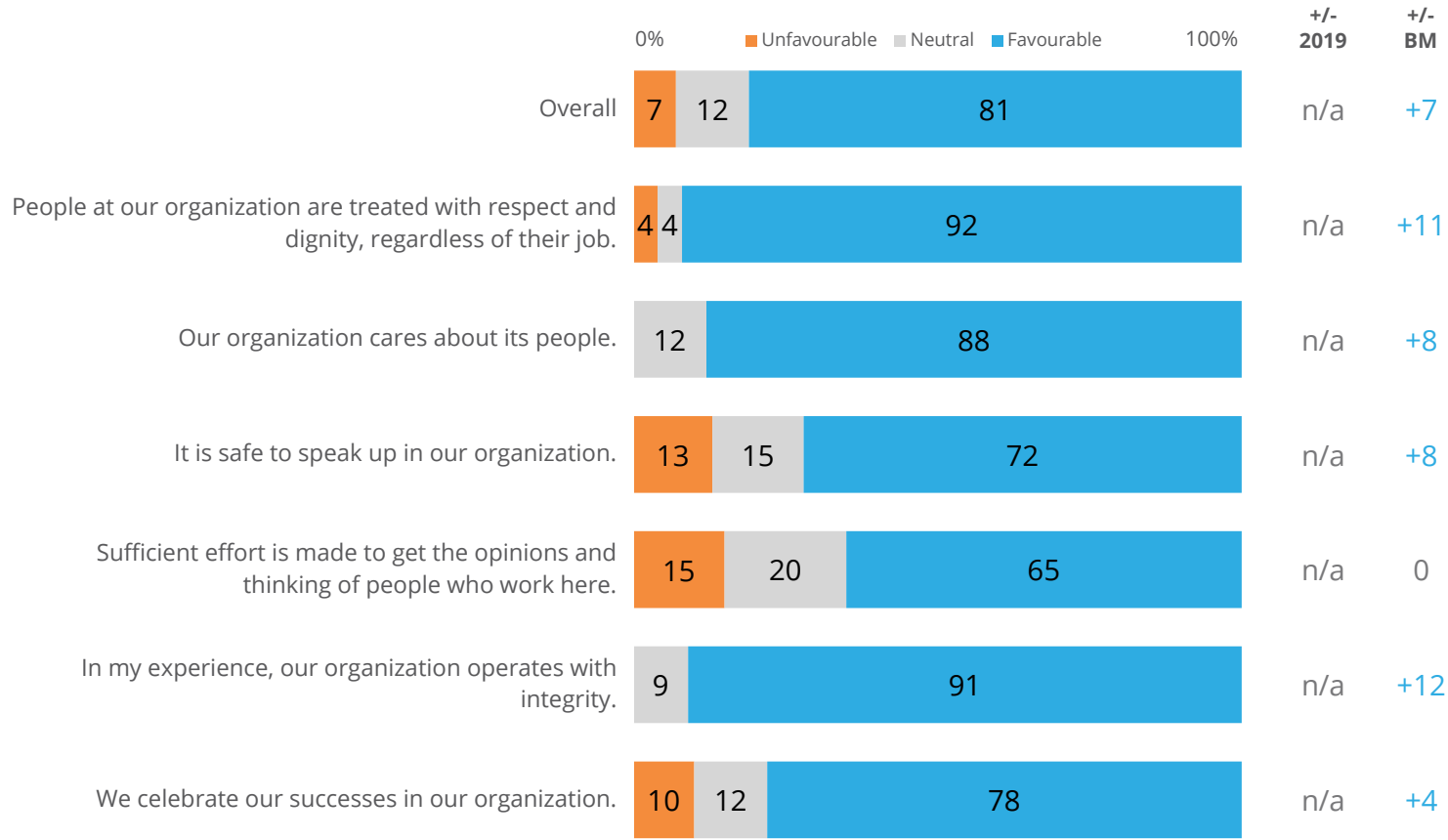
Growth & Development (Driver #2)



TALENTMAP

n = 49
Data is rounded to the nearest whole number

Organizational Culture (Driver #3)



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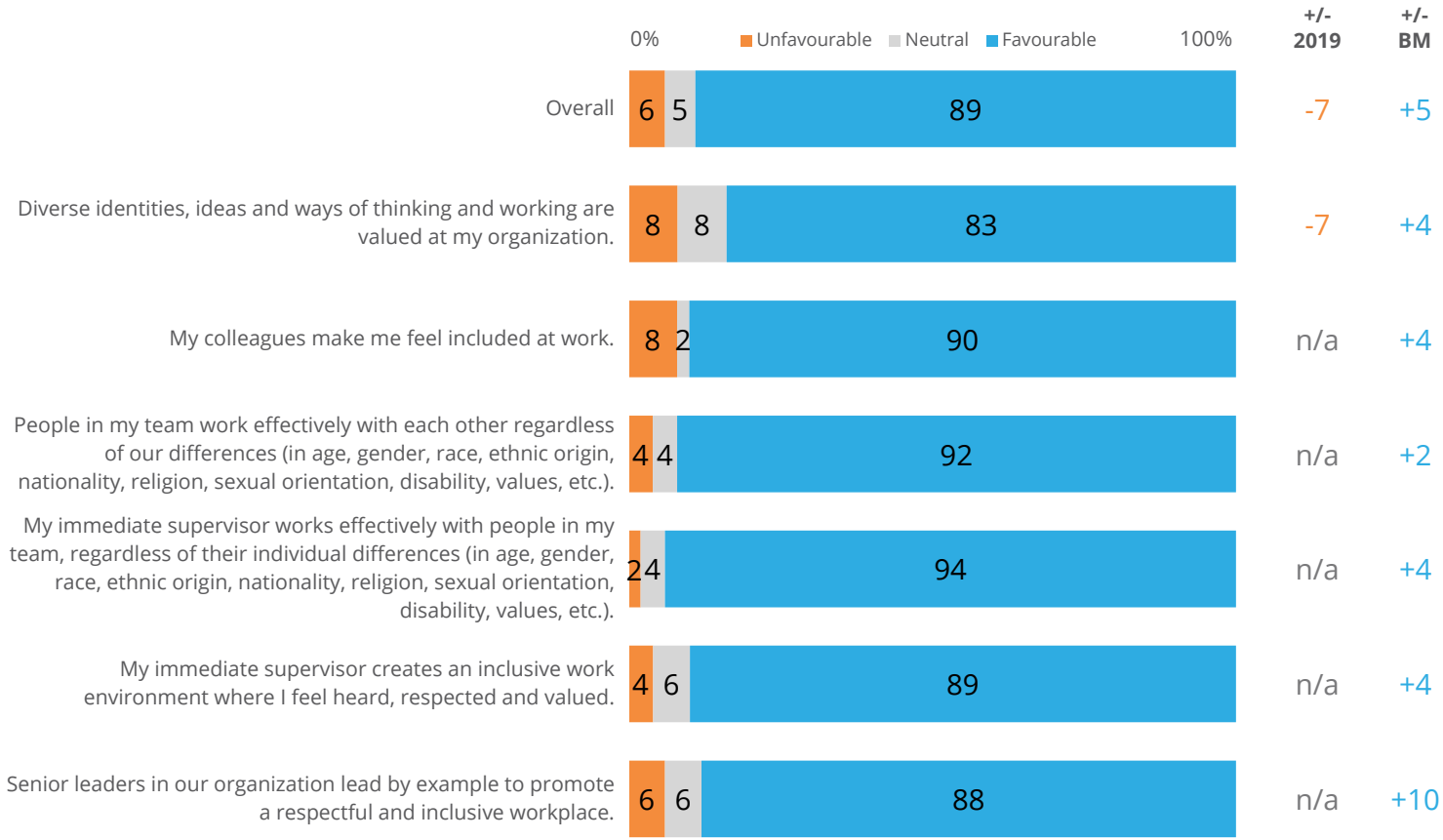
Diversity & Inclusion (Driver #4)



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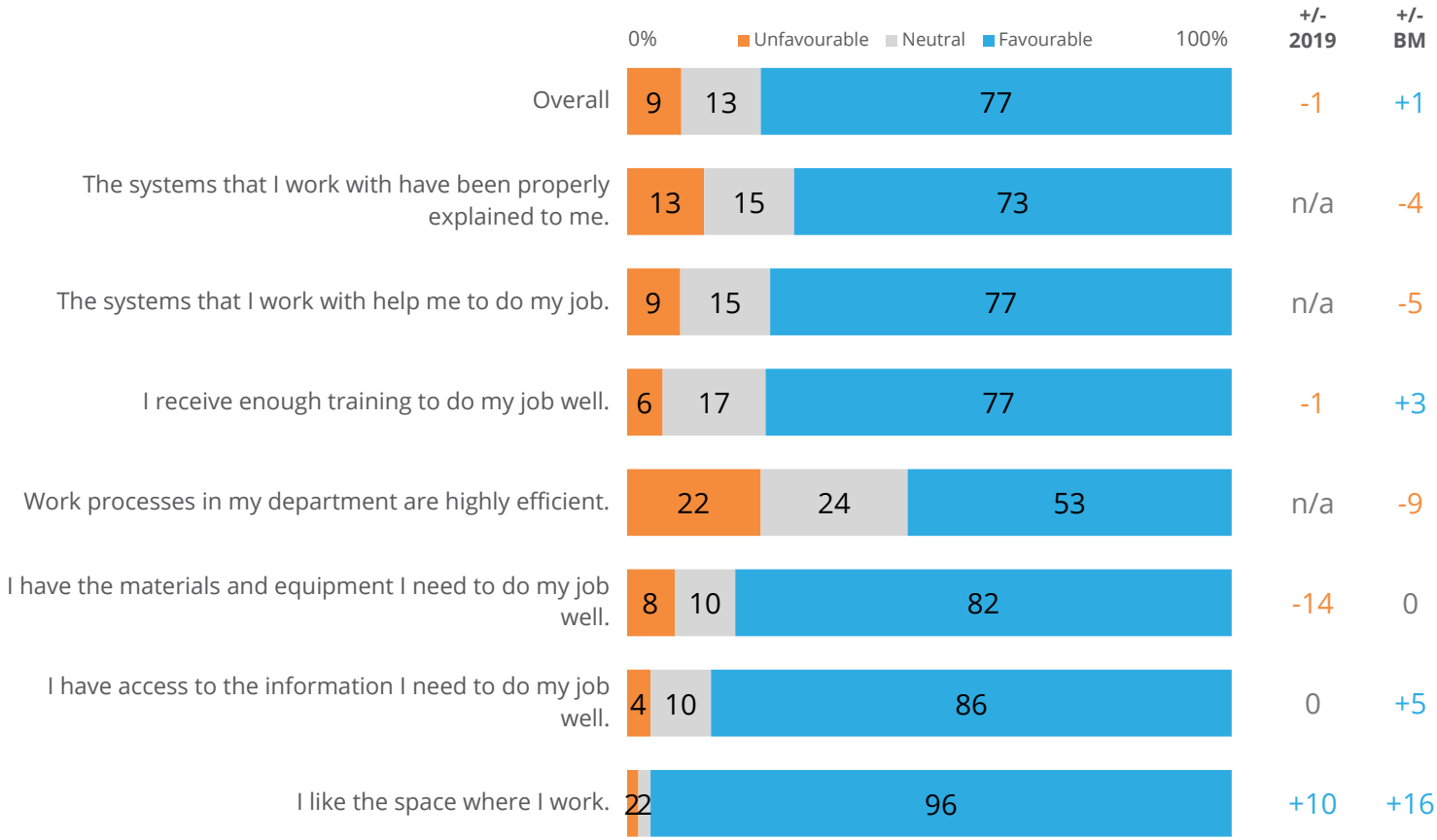
Systems & Resources



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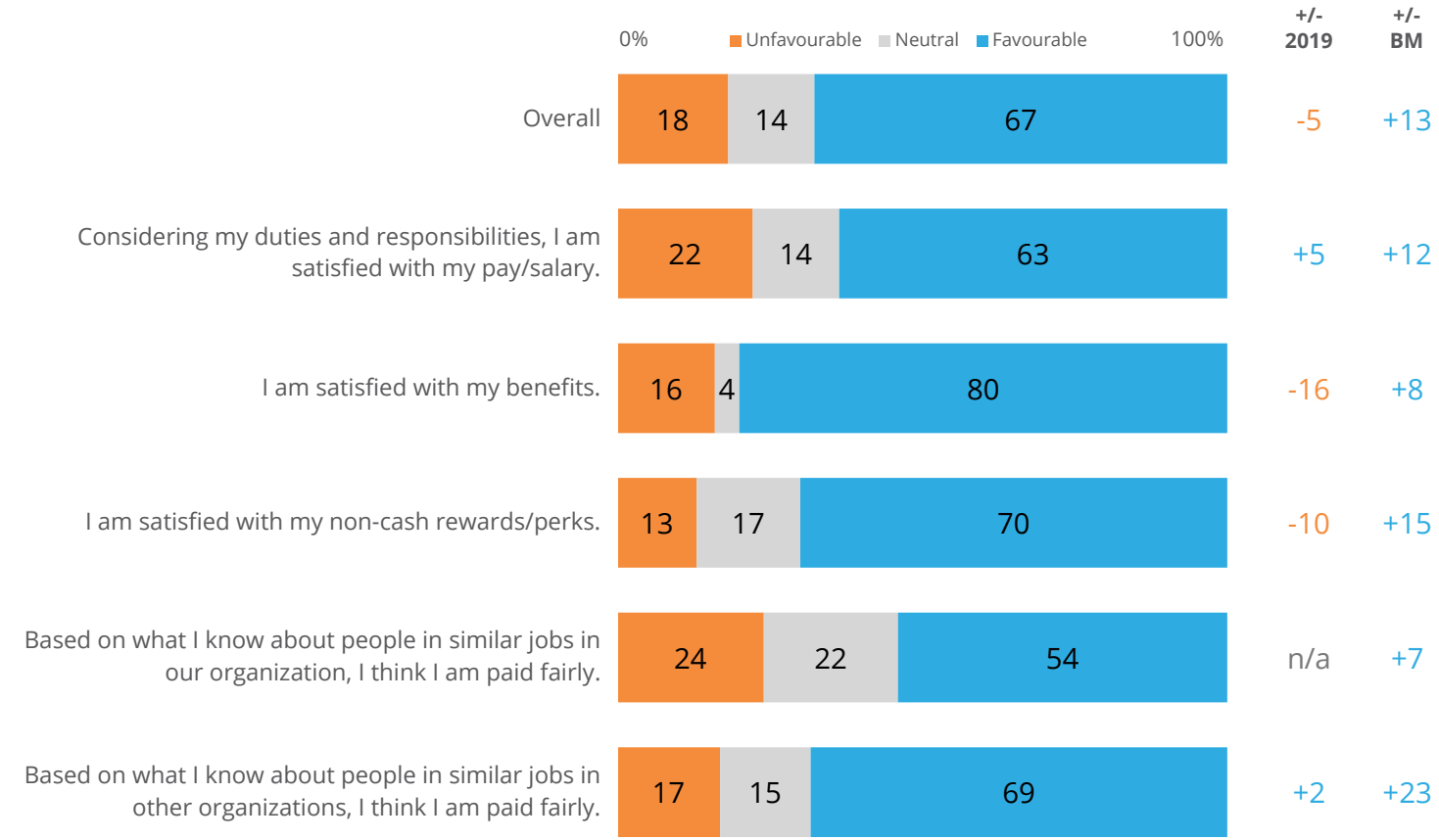
Data is rounded to the nearest whole number

Compensation



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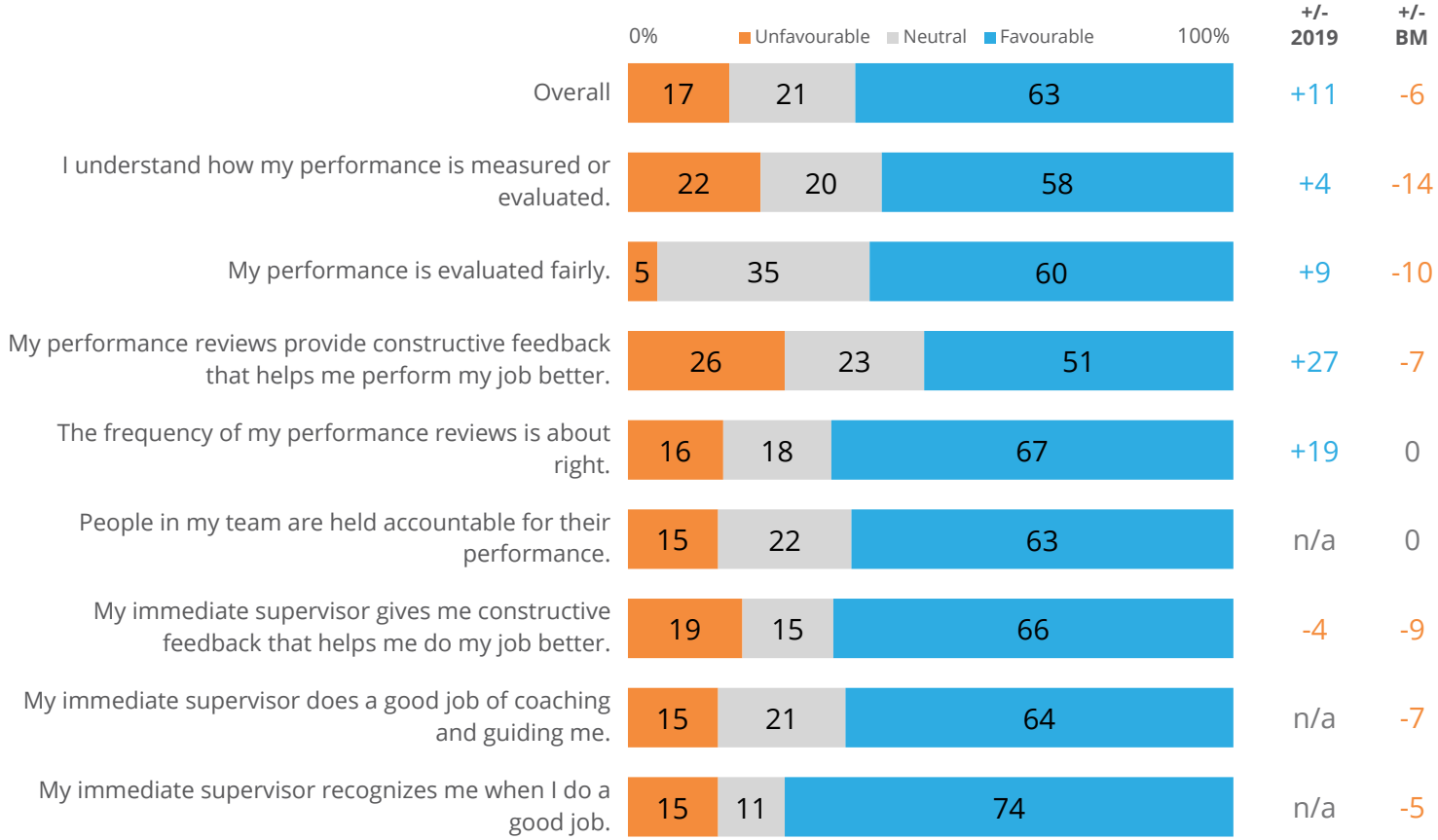
n = 49
Data is rounded to the nearest whole number

Performance Management



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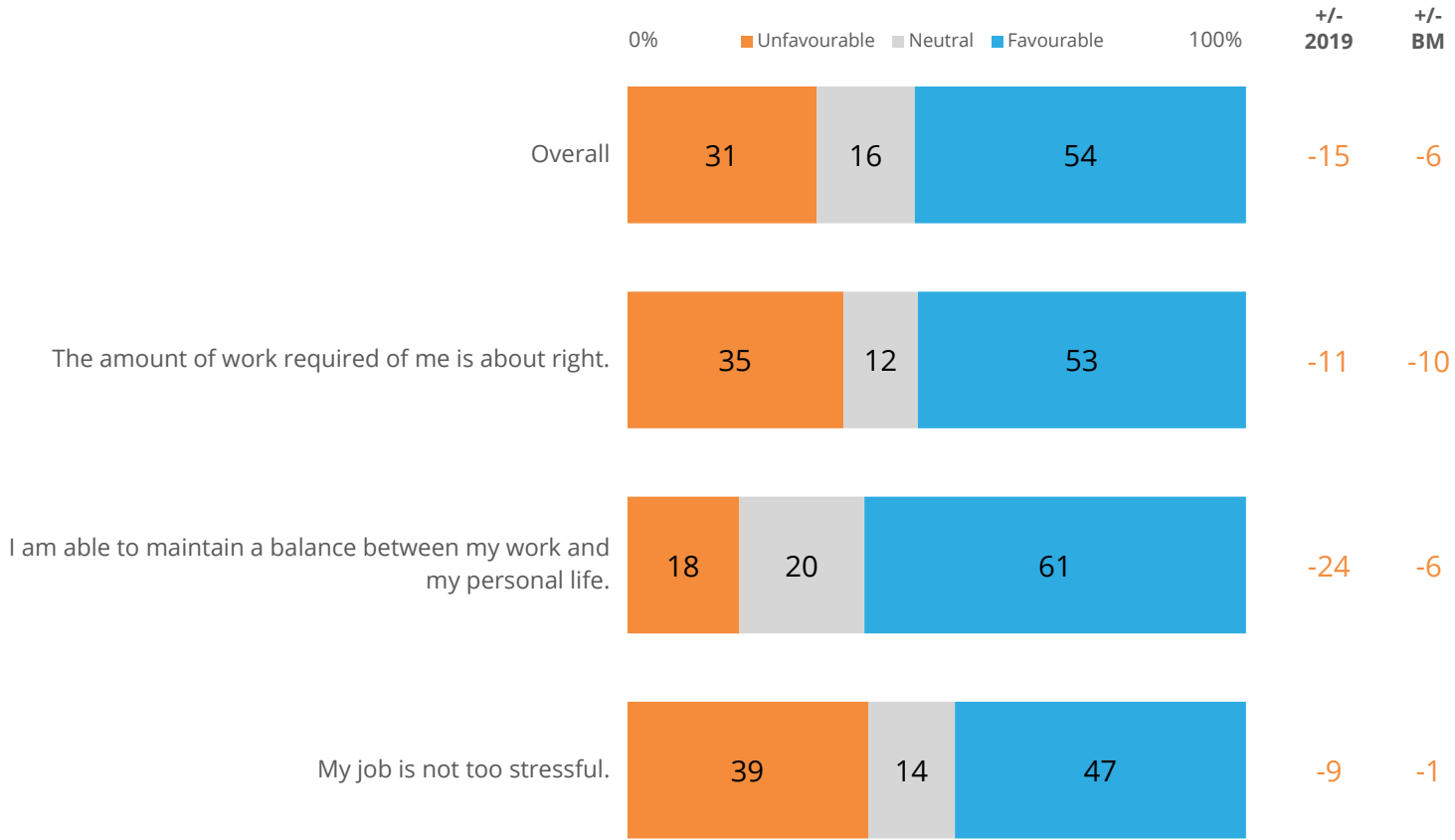
Work/Life Balance



TALENTMAP

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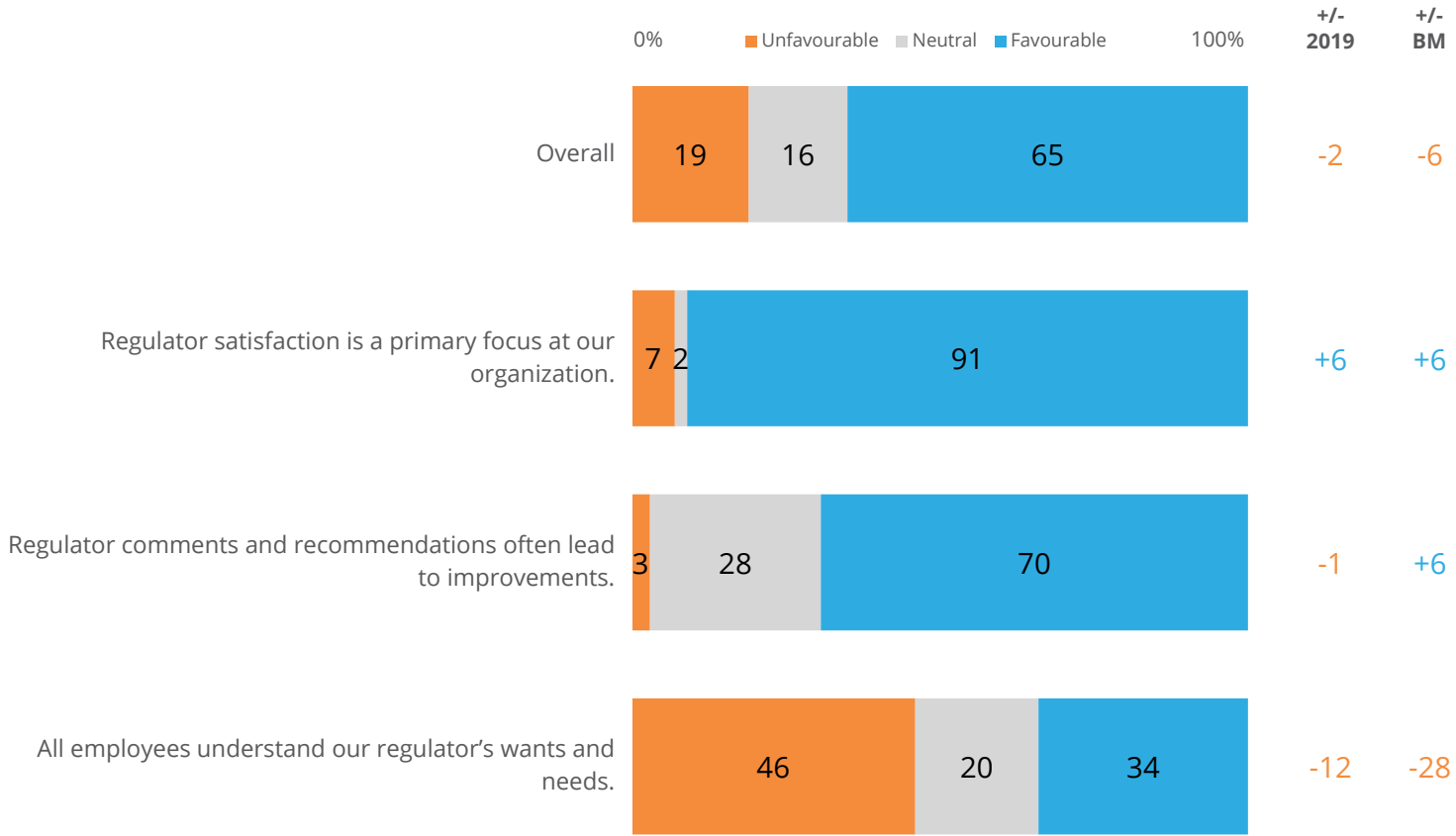
Regulator Focus



TALENTMAP

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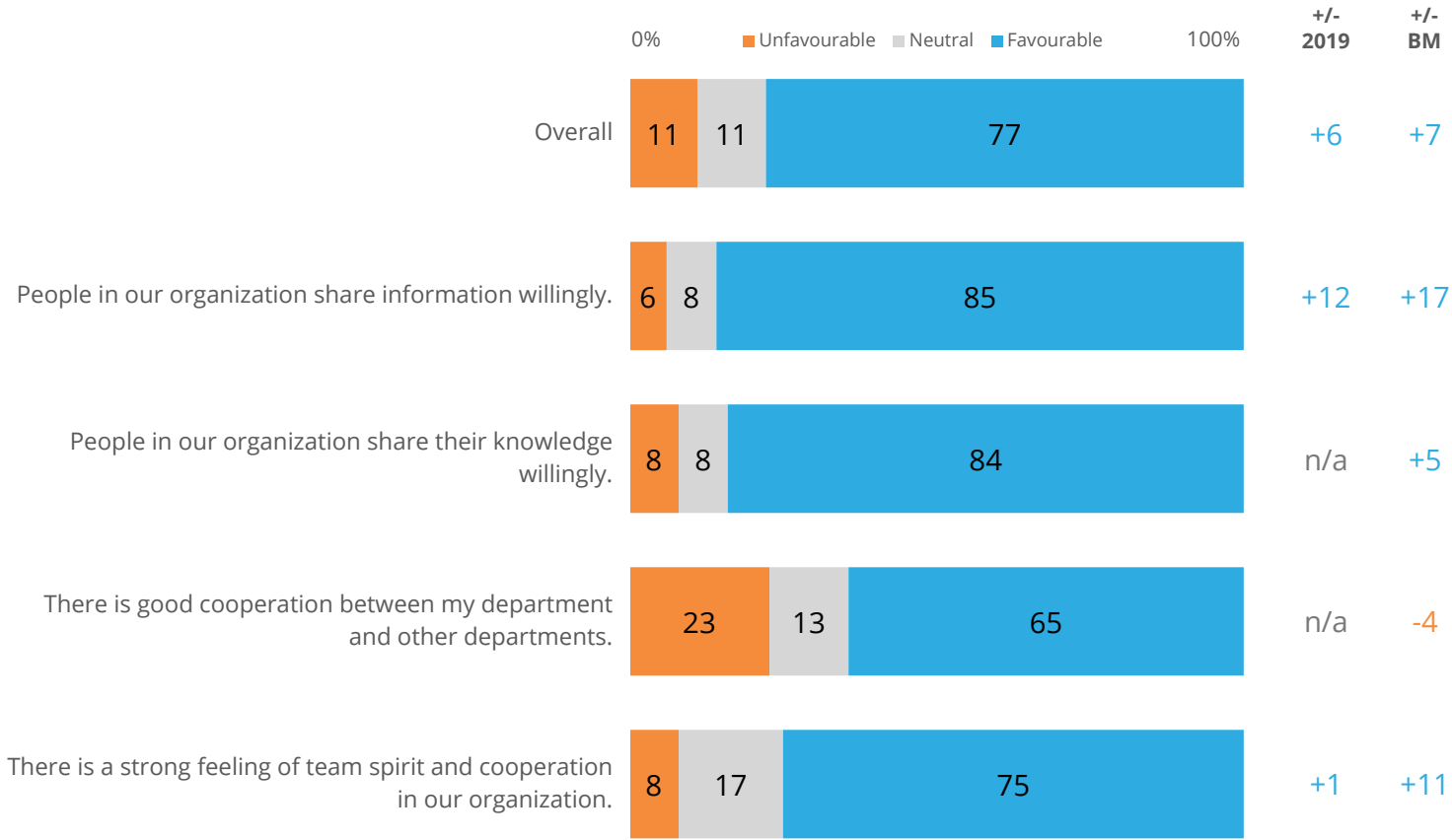
Teamwork



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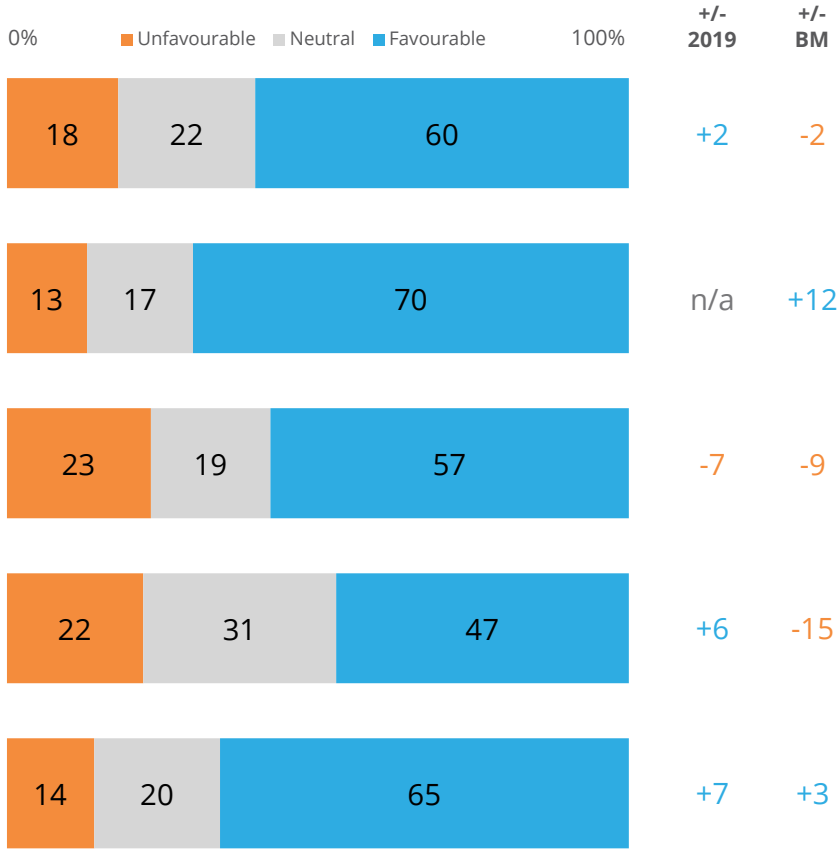
Data is rounded to the nearest whole number

Innovation



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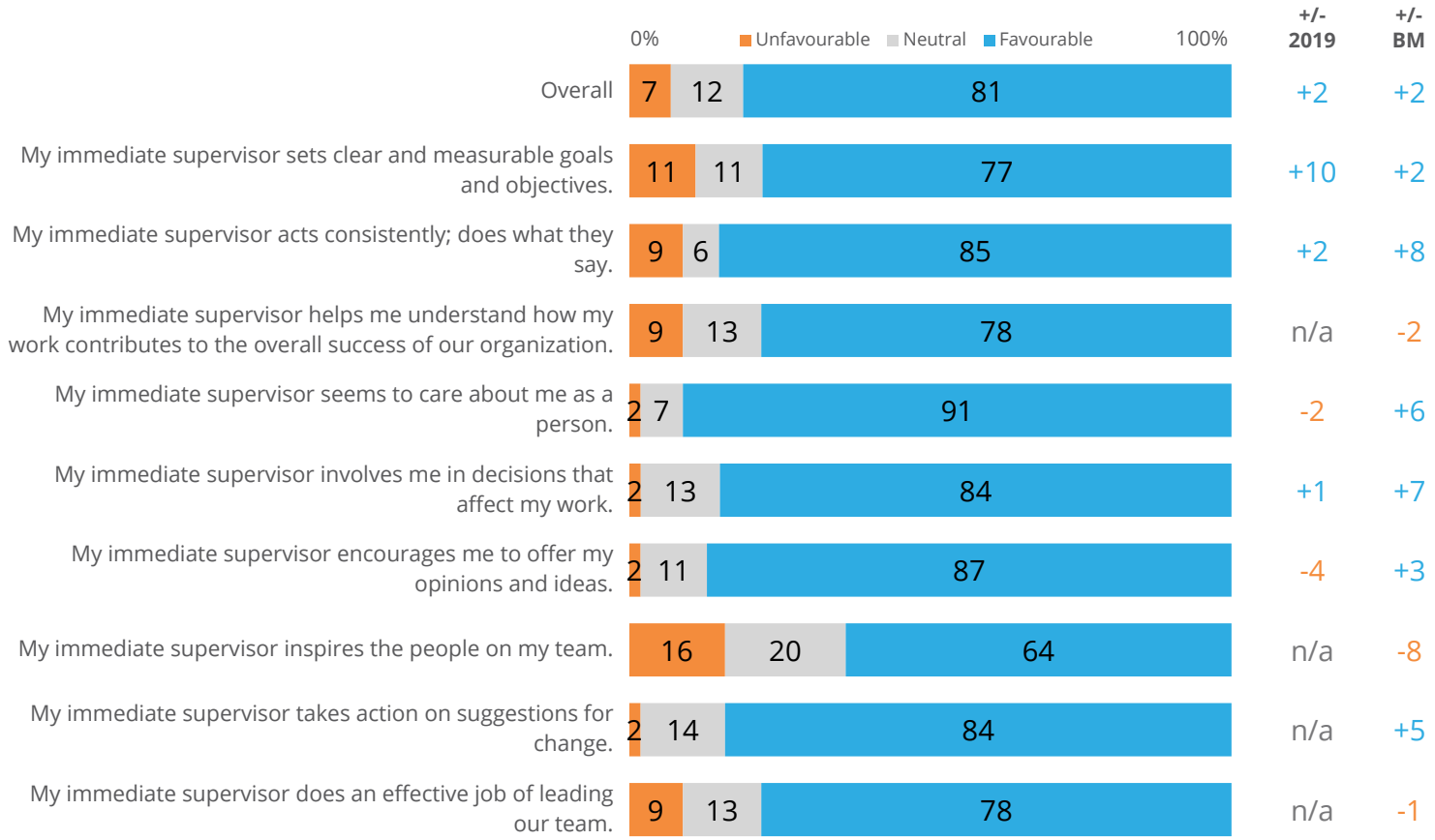
Immediate Supervisor



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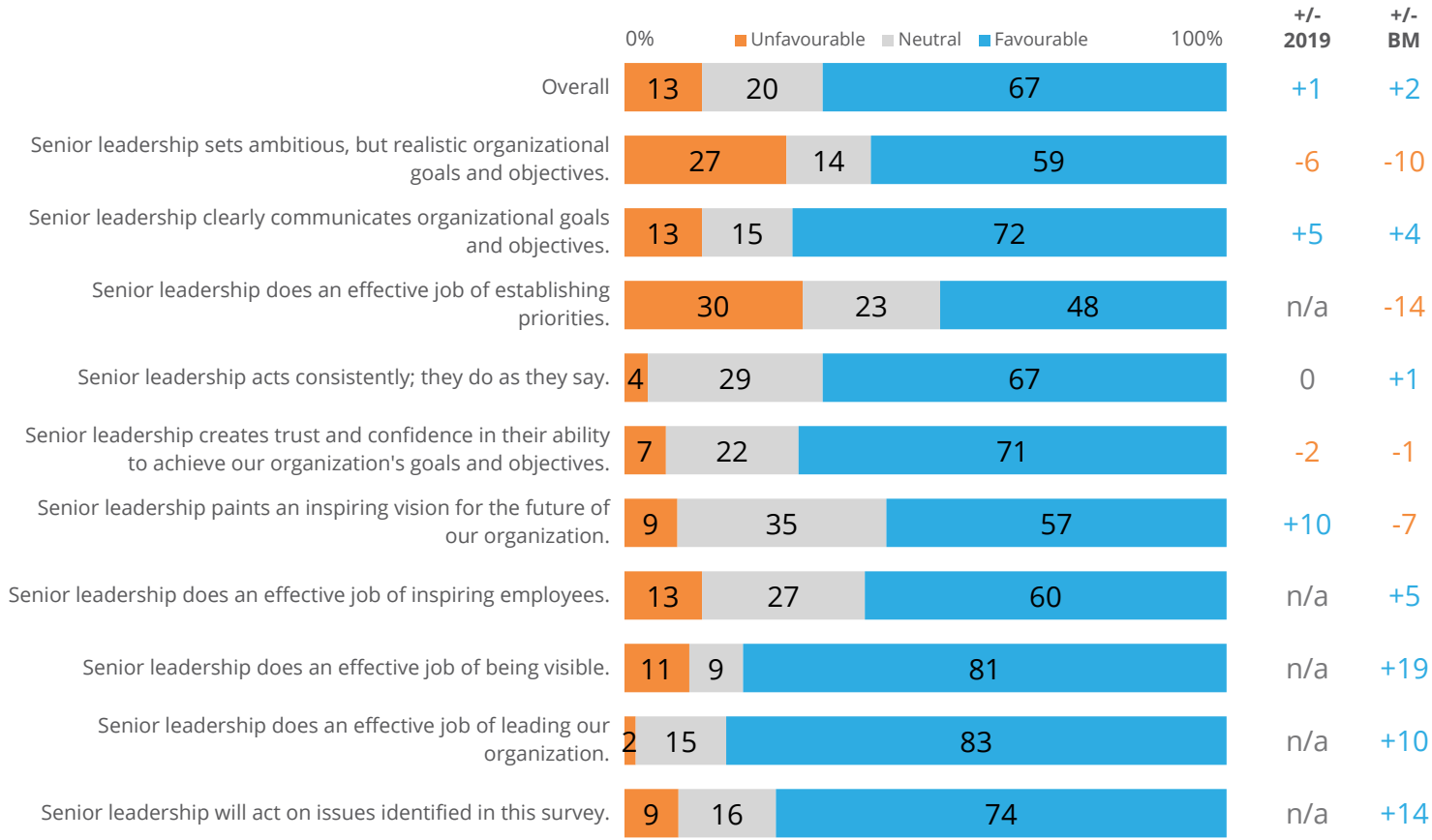
Senior Leadership



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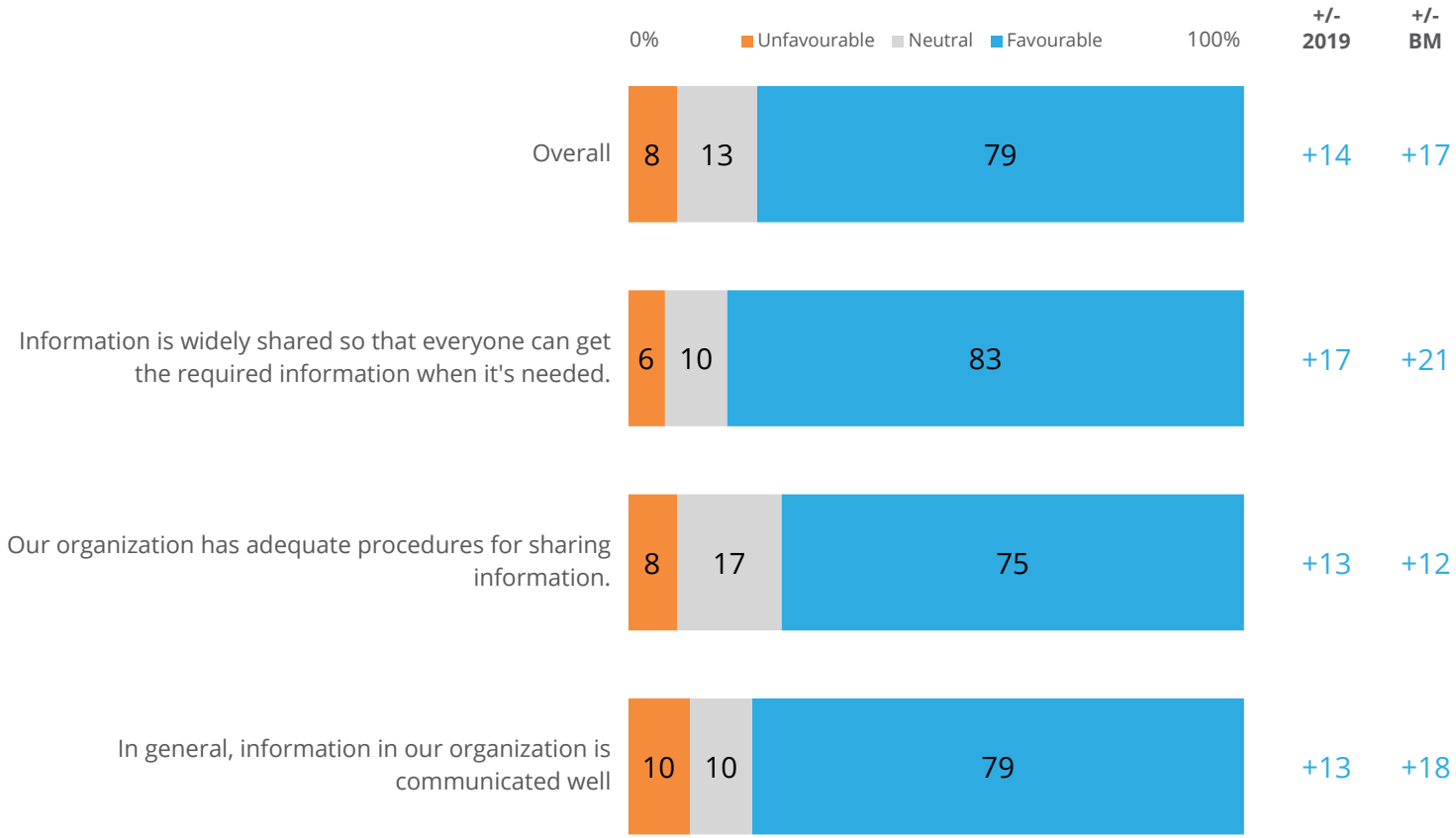
Information & Communication



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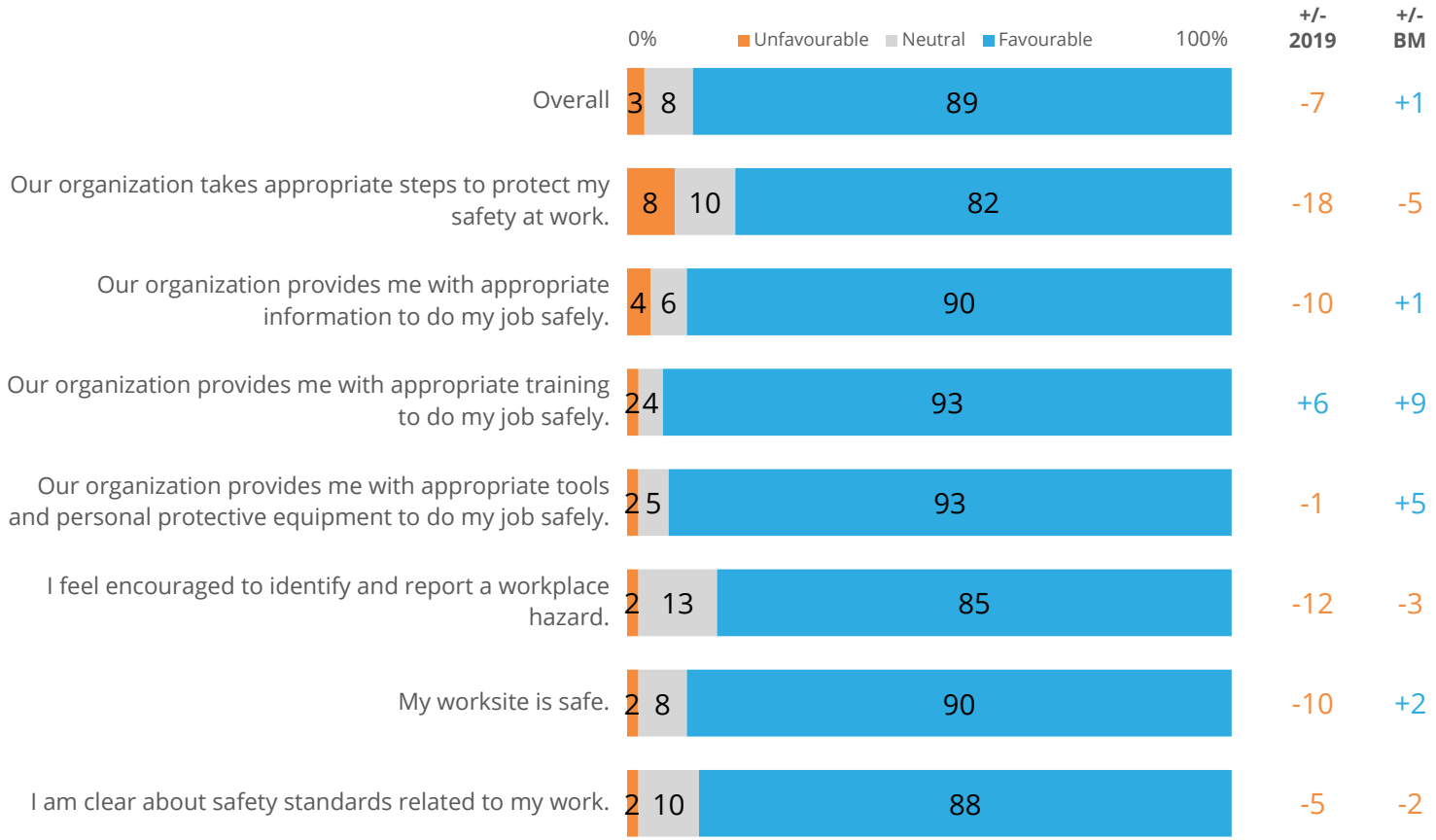
Safety



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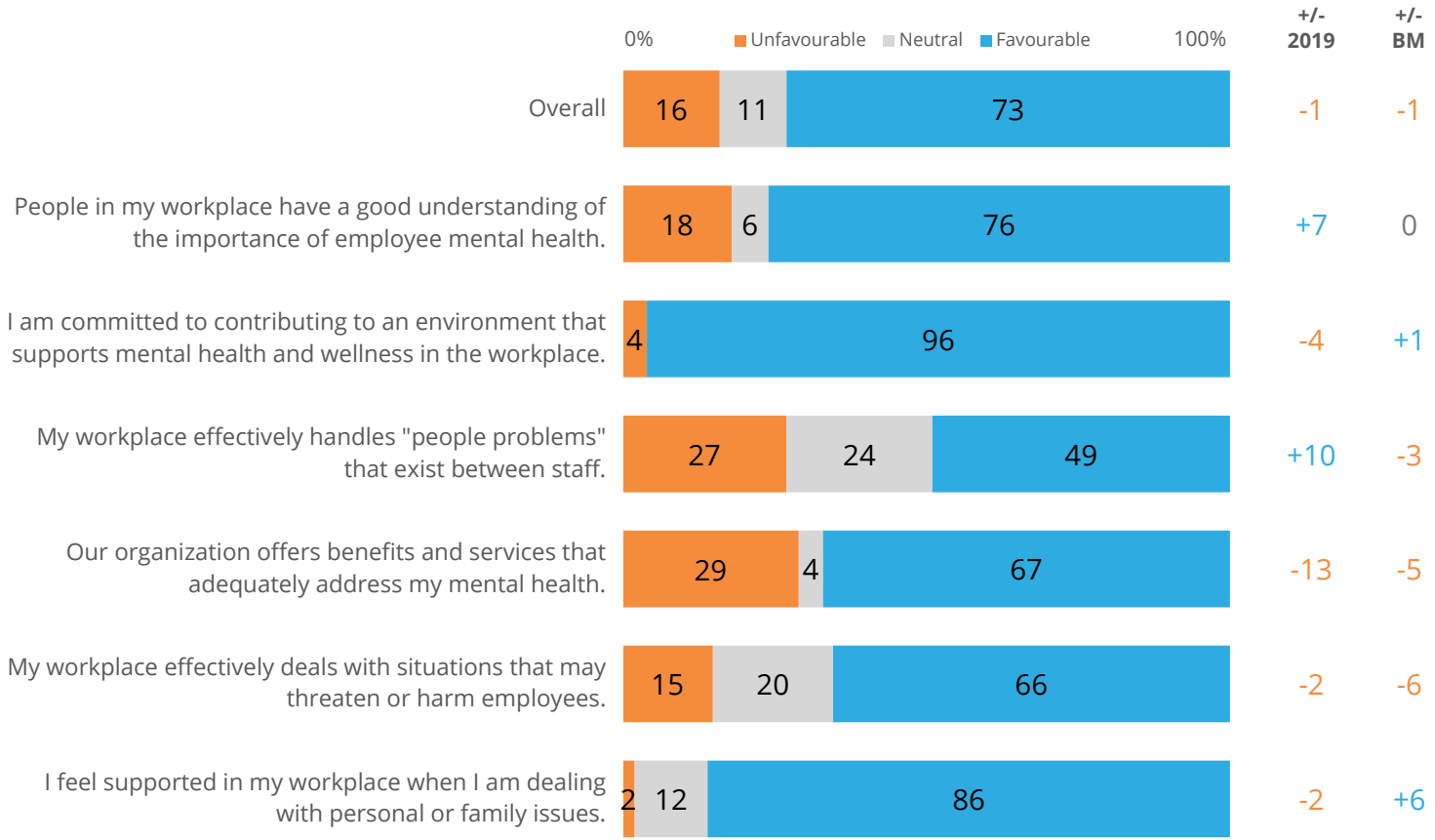
Mental Health



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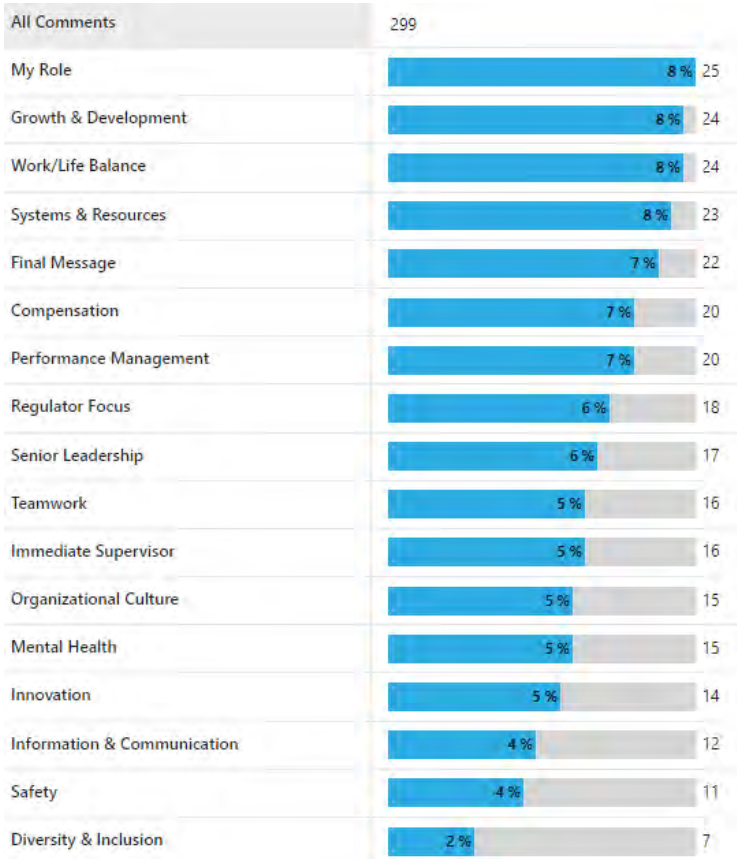
Comments per Dimension



TALENTMAP

n = 49
Data is rounded to the nearest whole number

Questions?

www.TalentMap.com

Thank you!

BRIEFING NOTE: For information

Q1 Interim Strategic Performance Report to the Board	2.3
Purpose:	To provide an interim report on the progress against the 2022-2024 Strategic Plan
Link to the Strategic Plan / Purposes:	Board responsibility: Hold itself and its Direct Reports accountable Board responsibility: Provide ongoing and appropriate strategic direction
Link to the Corporate Risk Profile:	Decreased confidence in the governance functions (Board risk)
Prepared by:	Mélanie Ouellette, Manager, Strategic and Operational Planning
Presented by:	Gerard McDonald, Chief Executive Officer

Background

- The 2022-2024 Strategic Plan and its objectives and outcomes resulted from extensive consultation with Regulators and was approved by the Members in May 2021.
- The new strategic reporting template was presented to and endorsed by the Governance Committee in March 2021.
- The performance measures were approved by the Board at its June 2021 strategic workshop.
- This interim strategic performance report covers Q1 of 2023 (January 1 – March 31, 2023).
- The report focuses on the achievement of objectives set in the 2022-2024 Strategic Plan.
- The outcomes set in the 2022-2024 Strategic Plan are longer-term and cannot be measured at this point.

Status update

- All Strategic Priorities are on target to be completed in 2024.

Next steps

- The Board will receive a quarterly update with the Q2 update provided in October 2023.

Appendix

- **Appendix 1:** 2023-Q1 Interim strategic performance report

Interim Strategic Performance Report: Q1-2023

This new strategic reporting template was reviewed and endorsed by the Governance Committee in 2021. Indicators were approved at the Board Strategic Workshop in June 2021. Performance is benchmarked against the 2022-2024 Strategic Plan that came into effect on January 1st, 2022.

Legend

	Status of strategic priority
Overall activities on track to be completed by 2024	
Overall activities experiencing some delays, no foreseen impact on completing the strategic priority by 2024	
Overall activities experiencing some delays which could impact the ability to complete the strategic priority by 2024	

Reporting Information Sources

The information included in this report has been obtained from the following sources:

Section	Source
Planned activities (as set in June 2021)	Copied from Board June 2021 strategic workshop presentation
2023 quarterly reporting	Staff updates as part of quarterly internal reporting
What we will do	Copied from 2022-2024 Strategic Plan
What does success look like	Copied from Board June 2021 strategic workshop presentation
How will we measure success in 2024*	

**A summary of indicators, by strategic priority, is located at the end of this report*

SP1.1, Investigate and validate the purpose and scope of accreditation												
Status:												
Planned activities *(as set in June 2021)*	**2022**				**2023**				**2024**			
1. Benchmark accreditation												
2. Report on state of engineering education												
3. Investigate academic requirement for licensure												
4. Examine the purpose of accreditation												
5. Set a path forward												

2023 quarterly reporting	**Q1**
1. Develop a benchmark of the accreditation system report	• Completed in 2022
2. Develop a state of education research report	• Completed in 2022
3. Develop an academic requirement for licensure	• Simulations kicked off on March 30, 2023, and will conclude in mid May. • Research will ensue post simulation and plans for regulator consultations will start in Q2 and Q3 and executed in Q4
4. Develop a foundational statement about the purpose of accreditation	• Simulations kicked off on March 30, 2023, and will conclude mid May. • Research will ensue post simulation and plans for regulator consultations will start in Q2 and Q3 and executed in Q4
5. Set a path forward	• No work this quarter, as planned
Summary of strategic priority	
What we will do	We will conduct a fundamental review of the accreditation process, investigate the best practices in engineering education, and work with Regulators and stakeholders to understand if there is a desire to adopt a new, national academic requirement for licensure as well as an updated purpose of accreditation. If there is, we will reconsider the accreditation system.
What does success look like?	A. All stakeholders have visibility of the modes of accreditation in use nationally and internationally B. All stakeholders have visibility of the current and future realities of engineering education C. Regulators have an academic requirement for licensure, applicable to all D. All stakeholders understand the purpose of accreditation E. Engineers Canada, including the CEAB and CEQB, have direction to implement systems aligned with the purpose and the academic requirement for licensure

SP1.2, Strengthen collaboration and harmonization												
Status:												
Planned activities *(as set in June 2021)*	**2022**				**2023**				**2024**			
1. Collaborate with Regulator staff to identify barriers and opportunities												
2. Develop a national statement of collaboration with all jurisdictions												
3. Identify specific areas of harmonization for collaboration												

2023 quarterly reporting	**Q1**
1. Collaborate with Regulator staff to identify barriers and opportunities	• Completed in 2022
2. Develop a national statement of collaboration with all jurisdictions	• All work on track • Individual consultations will be completed by end of Q2
3. Identify specific areas of harmonization for collaboration	• No work this quarter, as planned
Summary of strategic priority	
What we will do	Fostering collaboration and consistency of requirements, practices, and processes across jurisdictions is at the heart of our mandate. We will work with Regulators to understand barriers and success factors leading to harmonization and facilitate the adoption of a national agreement that will establish the principles and areas where pan-Canadian harmonization will be sought.
What does success look like?	A. Engineers Canada has a clear mandate and key focus areas for regulatory harmonization B. Regulators benefit from collaboration and resource sharing, supporting improved practices

SP1.3, Support the regulation of emerging areas												
Status:												
Planned activities *(as set in June 2021)*	**2022**				**2023**				**2024**			
1. Identify and investigate new and overlapping areas of engineering practice that will have a long-term impact on the public												
2. Continue to work with the federal government to promote the role of engineers in emerging areas												

2023 quarterly reporting	**Q1**
1.Identify and investigate new and overlapping areas of engineering practice that will have a long-term impact on the public	• General Direction consultation complete • Draft paper has been submitted by consultant • Final Paper to be published June 30 2023
2.Continue to work with the federal government to promote the role of engineers in emerging areas	• Engineers Canada continued to promote the role of engineers in emerging areas through already published national position statements.
Summary of strategic priority	
What we will do	Technological advances move much faster than legislative change and engineers who work in emerging areas of practice may not fully understand or consider the long-term professional and ethical impacts and obligations. We will provide information to Regulators on the long-term impacts of engineering practice in emerging areas and a framework for the evaluation of professional and ethical obligations. This will enable Regulators to educate license holders in these emerging areas of practice and to regulate more effectively.
What does success look like?	A. Regulators receive information that helps them adapt their admission, enforcement, and practice-related processes and uphold the framework for ethical practice B. The federal government is made aware of the importance of the work of engineers in emerging areas

SP2.1, Accelerate 30 by 30												
Status:												
Planned activities *(as set in June 2021)*	**2022**				**2023**				**2024**			
1. National research strategy												
2. Facilitate collaboration and information exchange for Regulators												
3. 30 by 30 annual national conference												
4. Reporting on national and regional metrics												
5. Engaging employers												
6. National resources												

2023 quarterly reporting	**Q1**
1. National research strategy	• Secured project manager • Initiation phase of project extended into Q2
2. Facilitate collaboration and information exchange for Regulators	• Monthly 30 by 30 newsletter and updates on key projects sent to Regulators and Champions network.
3. 30 by 30 annual national conference	• Changed date of conference to align with Annual Meeting of Members • Established partnership with Engineers Nova Scotia for 2023 conference • Consulted with 30 by 30 champions & developed conference program • All event logistics finalized
4. Reporting on national and regional metrics	• Analysis of data will begin in Q3
5. Engaging employers	• Worked with regulators to identify and start to secure representative from engineering employers to participate in our Champion Change In-person Employer Leadership Summit • Met with internal staff from Regulatory Affairs Department to review Regulator Employer Strategy Recommendation
6. National resources	• Published an updated Managing Transitions guide • Discovery and gap analysis in resources resulted in creation of a supplement and training to support gaps in Canadian Engineering Qualifications Board Guideline on Gender Workplace Equity • Three of our 30 by 30 working groups met for knowledge sharing and to support virtual lead up session for the 30 by 30 conference
Summary of strategic priority	
What we will do	To support progress towards 30 by 30 and to develop Engineers Canada's capacity to address the underlying issues holding back the progress of 30 by 30.
What does success look like?	A. Regulators have information and support that enables them to increase inclusion and the number of engineering graduates who proceed through the licensure process B. Representation of women is increasing within every step of the pipeline: students at HEIs, graduates, engineers-in-training (EITs), newly licensed engineers, and engineers C. Employers have information that enables them to make their workplaces more equitable, diverse, and inclusive D. Lessons learned from the 30 by 30 work inform initiatives in support of increasing representation of under-represented groups including but not restricted to Indigenous, racialized, and LGBTQ2+ persons

SP2.2, Reinforce trust and the value of licensure												
Status:												
Planned activities *(as set in June 2021)*	**2022**				**2023**				**2024**			
1. Marketing campaign												
2. Value of licensure messaging												
3. Engineering grad and EIT outreach programming												
4. Foundational research												

2023 quarterly reporting	**Q1**
1. Marketing campaign	• Media buy was approved, production completed, and creative approved. • By end of quarter the campaign was in final preparation stages and targeted to launch on April 10, 2023
2. Value of licensure messaging	• Messaging framework content accepted by regulator advisors and communications officials • Content moves to layout and design, to be formally delivered in Q2
3. Engineering graduate and EIT outreach programming	• Outreach strategy and program development is underway, based on recommendations received in 2022
4. Foundational research	• No work this quarter, as planned
Summary of strategic priority	
What we will do	We will create and promote a consistent, national message that will showcase the diversity of the profession, the breadth of engineering in both traditional and new disciplines, and the value of engineering licensure to the public, engineering graduates, engineers-in-training (EITs), and employers.
What does success look like?	A. Targeted public audiences perceive engineers as trustworthy and recognize engineering as a licensed profession B. Engineering graduates and EITs recognize value in licensure C. Regulators have a valuable national messaging framework and marketing support tools

SP3.1, Uphold our commitment to excellence												
Status:												
Planned activities *(as set in June 2021)*	**2022**				**2023**				**2024**			
1. Sustain an excellence culture												
2. Identify and implement continual improvements												
3. Confirm measurements and sustainability												
4. Achieve Platinum level certification from Excellence Canada												

2023 quarterly reporting	**Q1**
1. Sustain an excellence culture	• Refreshed communication and engagement tactics have been developed in consultation with staff and senior leadership with plans for implementation in Q2
2. Identify and Implement continual improvements	• Any work associated with closing previous gaps has been included in the current planning process and performance management cycle • No new gaps have surfaced as a result of the self-assessment noted below
3. Confirm measurements and sustainability	• An operational self-assessment has been completed considering the results of the 2022 employee engagement survey results. The organization is being assessed against the Organizational Excellence Standard developed by Excellence Canada.
4. Achieve Platinum certification	• The submission under development in consultation with senior leadership
Summary of strategic priority	
What we will do	The demand for change continues and we are facing pressure to deliver on the diverse and changing needs of Regulators, Higher Education Institutions (HEIs), and the engineering community. To continually adapt, we need an effective and sustainable approach that ensures that we are a high-performing organization. By 2024, we will achieve platinum level certification from Excellence Canada by demonstrating measurable, sustained, and continually-improved performance over at least a three-year period, as measured against the Excellence, Innovation, and Wellness Standard.
What does success look like?	A. Regulators, HEIs, and the engineering community benefit from effective delivery of products and services B. Staff benefit from increased engagement and retention, working in motivated teams, and improved health C. Engineers Canada benefits from sustainment of a high level of performance

Summary - How will we measure success in 2024?

Strategic priority	What does success look like	How will we measure success in 2024?
SP1.1, Investigate and validate the purpose and scope of accreditation	A. All stakeholders have visibility of the modes of accreditation in use nationally and internationally	A1. Publication of the accreditation system benchmarking report
	B. All stakeholders have visibility of the current and future realities of engineering education	B1. Publication of the engineering education report
	C. Regulators have an academic requirement for licensure, applicable to all	C1. The Engineers Canada Board passes a motion affirming the academic requirement for licensure C2. Regulators receive the academic requirement for licensure and all CEOs commit to sharing and implementing it with all necessary groups C3. CEAB receives the academic requirement for licensure and commits to incorporating it in their documents C4. CEQB receives the academic requirement for licensure and commits to incorporating it in their documents C5. HEIs receive the academic requirement for licensure
	D. All stakeholders understand the purpose of accreditation	D1. The Engineers Canada Board passes a motion affirming the purpose of accreditation D2. Regulators receive the affirmed purpose of accreditation, and all CEOs commit to sharing it with all necessary groups D3. CEAB publishes the affirmed purpose of accreditation D4. CEQB members receive the affirmed purpose of accreditation D5. Higher Education Institutions (HEIs) receive the affirmed purpose of accreditation D6. Students, through the CFES, receive the affirmed purpose of accreditation
	E. Engineers Canada, including the CEAB and CEQB, have direction to implement systems aligned with the purpose and the academic requirement for licensure	E1. Path-forward report is published and distributed to Regulators, CEAB, CEQB, Engineers Canada CEO, EDC, and CFES

Strategic priority	What does success look like	How will we measure success in 2024?
SP1.2, Strengthen collaboration and harmonization	A. Engineers Canada has a clear mandate and key focus areas for regulatory harmonization	A1. Consultation reports that document all Regulators' perspectives A2. Production of a national statement of collaboration signed by Regulators A3. The Regulator CEOs defining one or more areas for future harmonization
	B. Regulators benefit from collaboration and resource sharing, supporting improved practices	B1. The number of Regulators contributing to the development of programs, products, services, information, or processes B2. The number of Regulators using programs, products, services, information, or processes that are nationally promoted
SP1.3, Support the regulation of emerging areas	A. Regulators receive information that helps them adapt their admission, enforcement, and practice-related processes and uphold the framework for ethical practice	A1. Regulatory research papers on emerging areas of engineering practice are published and distributed to Regulators A2. Regulators report that they are reading the reports, considering them in their decision making, or that they helped them fulfill their mandate A3. Perceived value of research papers by the Regulators
	B. The federal government is made aware of the importance of the work of engineers in emerging areas	B1. One new National Position Statement relating to emerging disciplines is developed, as appropriate B2. Number of engagements (written consultations and in-person meetings) with parliamentarians or senior federal officials, on matters relating to emerging areas of engineering practice
SP2.1, Accelerate 30 by 30	A. Regulators have information and support that enables them to increase inclusion and the number of engineering graduates who proceed through the licensure process	A1. Completion and use of a national research strategy on diversity data demographics and qualitative research on equity, diversity, and inclusion A2. The number of Regulators contributing to the development and implementation of the strategy; Regulators involved in development only; Regulators not engaged A3. Publication of research reports on Engineers Canada website A4. Number of partners engaged in the development of the research report(s) (i.e., development and participation; participation only; not engaged) A5. Facilitation of collaboration and information exchange for Regulators (e.g., continued coordination of 30 by 30 working group, communications that address Regulator needs) A6. We held 3 to 4 annual meeting with Regulators

Strategic priority	What does success look like	How will we measure success in 2024?
	B. Representation of women is increasing within every step of the pipeline: students at HEIs, graduates, engineers-in-training (EITs), newly licensed engineers, and engineers	B1. Reporting on national and regional metrics: • Provide tools for Regulator tracking and reporting on metrics related to 30 by 30 B2. Annual publication of National Membership Report B3. Annual collection of Regulator scorecard metrics B4. Annual scorecard summary presented to Board and CEO Group B5. 3-4 Regulators are involved in the development and use of target
	C. Employers have information that enables them to make their workplaces more equitable, diverse, and inclusive	C1. Completing addressing of the recommendations in the GBA+ report* regarding engaging employers C2. Creating a national strategy to engage employers with buy-in from the Regulators and building on the existing 30 by 30 network of Champions C3. All Regulators contribute a national 30 by 30 employer strategy C4. Recognizing employer excellence in 30 by 30
	D. Lessons learned from the 30 by 30 work inform initiatives in support of increasing representation of under-represented groups including but not restricted to Indigenous, racialized, and LGBTQ2+ persons	D1. Execution of annual 30 by 30 conference from 2022 to 2024 and inviting Regulators, HEIs and employers to contribute to a culture change in the engineering profession at a high profile, widely accessible national event, featuring best practices, key research, and actionable tools D2. The number of Regulators contributing and participating to the development of the conference D3. The number of employers: contributing and participating in the conference D4. Completion of national resources that respond to recommendations and best practices outlined in previous research. For example, a resource that can be used by Regulators to improve their licensure assistance and employer awareness programs based on the 2021 GBA+ report* on national Licensure Assistance Program and Employee Awareness Program D5. The number of Regulators participating and promoting the national resources *Definition: GBA+ is an analytical process created by Status of Women Canada; used across the country by the federal government and also well-known across most sectors; considers multiple and diverse intersecting identity factors that impact how different people understand and experience initiatives

Strategic priority	What does success look like	How will we measure success in 2024?
SP2.2, Reinforce trust and the value of licensure	A. Targeted public audiences perceive engineers as trustworthy and recognize engineering as a licensed profession	A1. Pre- and post-campaign audience perception research A2. Number of impressions and actions A3. Value of earned media* A4. Number and sentiment* of online interactions *Definitions: • Earned media – news coverage in media • Earned media value – the estimated value of news coverage • Sentiment analysis – an analysis of the tone of comments
	B. Engineering graduates and EITs recognize value in licensure	B1. Pre- and post-campaign perception research targeting engineering graduates and EITs B2. Number of impressions and actions B3. Number and sentiment of online interactions
	C. Regulators have a valuable national messaging framework and marketing support tools	C1. Number of Regulators engaged in the development of the framework and tools and the nature of their involvement C2. Identification by Regulators of where and how the messaging and support tools will be used and follow up to confirm use C3. Ongoing feedback received on the project
SP3.1, Uphold our commitment to excellence	A. Regulators, HEIs, and the engineering community benefit from effective delivery of products and services	A1. Achieve platinum certification as part of external benchmarking
	B. Staff benefit from increased engagement and retention, working in motivated teams, and improved health	B1. Achieve platinum certification as part of external benchmarking
	C. Engineers Canada benefits from sustainment of a high level of performance	C1. Achieve platinum certification as part of external benchmarking

Draft MINUTES OF THE 218th ENGINEERS CANADA BOARD MEETING

February 23, 2023, 8:30am-5:00pm (ET)

Hybrid delivery: Chateau Laurier, Ottawa, ON | Zoom

The following Directors were in attendance:	
K. Baig, President (Chair), Québec	C. Cumming, Nova Scotia
N. Hill, President-Elect, Ontario	A. English, British Columbia
D. Chui, Past President, Ontario	S. Jha, Northwest Territories and Nunavut
A. Anderson, Yukon	T. Joseph, Alberta
A. Arenja, Ontario	D. Nedohin-Macek, Manitoba
N. Avila, Alberta	M. Rose, New Brunswick
M. Belletête, Québec (virtual)	D. Spracklin-Reid, Newfoundland and Labrador (virtual)
E. Barber, Saskatchewan	M. Sterling, Ontario
A. Baril, Québec (virtual)	J. Van der Put, Alberta
C. Bellini, Ontario	M. Wrinch, British Columbia
G. Connolly, Prince Edward Island (virtual)	
The following Directors sent regrets:	
V. Benz, Alberta	N. Turgeon, Québec
The following CEO Group Advisor was in attendance:	
L. Daborn, Chair, CEO Group	
The following Direct Reports to the Board were in attendance:	
M. A. Hodges, Chair, CEQB	G. McDonald, CEO
P. Klink, Chair, CEAB	L. Go, Acting General Counsel and Corporate Secretary
The following observers were in attendance:	
D. Abrahams, Staff, PEO (virtual)	S. Holmes, CEO, APEGS
M. Adams**,** President, Engineers and Geoscientists BC (virtual)	K. King, CEO, EngYK
	S. Kresta, Stakeholder, EDC (virtual)
J. Bradshaw, CEO, PEGNL	J. Landrigan, CEO, Engineers PEI
F. Collins, Vice-Chair, CEQB (virtual)	P. Mann, CEO, Engineers Nova Scotia (virtual)
J. Corriveau, Staff, APEGA	B. O'Keefe, President, PEGNL
K. Deluzio, Chair, EDC (virtual)	J. Quaglietta, CEO, PEO (virtual)
J. Desjarlais, President, APEGS	I. Smallwood, President, EGM (virtual)
L. Doig, President, APEGA	G. Vogelsang, President-Elect, APEGS
M. Fewer, Incoming CEO, PEGNL	H. Yang, CEO & Registrar, Engineers & Geoscientists BC
A. Gaffney, Stakeholder, CNAR	R. Roy, President, APEGNB
K. Hogan, President, EngYK	S. Sternbergh, Vice-President, EngYK (virtual)
The following staff were in attendance:	
J. Bard Miller, Manager, Governance and Board Services	S. Price, Executive Vice President, Regulatory Affairs
J. Chou, Governance Coordinator	J. Southwood, VP, Corporate Affairs & Strategic Partnerships
R. Gauthier, Executive Assistant (virtual)	J. Taylor, Manager, Public Affairs and Government Relations (virtual)
R. Melsom, Manager, CEQB	
D. Menard, Director, Finance (virtual)	H. Theelen, Director, Strategic Planning & Organizational Excellence (virtual)
M. Ouellette, Manager, Strategic and Operational Planning (virtual)	
	M. Warken, Manager, CEAB
R. Lampron, Accreditation Program Advisor (virtual)	N. Proulx, Director, Human Resources
A. Peverley, Coordinator, Qualifications	

1. Opening

1.1 Call to order and approval of agenda

Engineers Canada President, K. Baig, called the meeting to order at 8:33am ET. Participants were welcomed and the land was acknowledged.

Motion 2023-02-1D
Moved and seconded
THAT the agenda be approved and the President be authorized to modify the order of discussion.
Carried

Meeting rules and norms were reviewed, as included in the agenda book.

K. Baig shared a diversity moment focussed on climate change and its complexities and effects on our society. Women in marginalized groups, such as Indigenous women and Black women, are disproportionately affected. To learn more about the gendered effects of climate change, visit the Canadian Research Institute for the Advancement of Women.

1.2 Declaration of conflict of interest

No conflicts were declared. Participants were reminded to declare a conflict at any time during the meeting, as necessary.

1.3 Review of previous Board meeting

a) Action item list

The list was pre-circulated and it was noted that there are no outstanding actions.

b) Board attendance list

The attendance list as of February 8, 2023, was pre-circulated. No questions were received.

2. Executive reports

2.1 President's report

K. Baig reported to the Board on her Engineers Canada-related activities since the previous Board meeting which included the following activities:

- Working with staff on the Temporary exemption for students going on international exchange.
- Videotaping greeting messages for two regulators.
- Contributing to the planning of two conferences:
    - "Forum sur l'ingénieure et l'ingénieur de demain", as part of Polytechnique Montreal's 150th Anniversary, and
    - "ACFAS (Association francophone pour le savoir)".
- Contributing to a forthcoming article in *The Globe and Mail* about the 150th anniversary of Polytechnique Montreal.

No questions were received.

2.2 CEO update

G. McDonald, Engineers Canada CEO, reported that his weekly email to stakeholders contained all relevant updates. It was noted that Engineers Canada shares information between regulators when available but that these updates will remain separate from reporting on Engineers Canada activities.

2.3 CEO Group report

L. Daborn, CEO Group Advisor to the Board, presented the pre-circulated slides updating the Board on the CEO Group's meeting held on February 21, 2023. It was noted that CEO Group discussed the importance of, and workload put on, the General Visitor in the accreditation process and the resultant contributions to the process. No changes to the role are currently proposed by the CEO Group.

2.4 Presidents Group report

L. Doig, President, APEGA, presented the pre-circulated slides updating the Board on the President Group's meeting held on February 21, 2023. The following discussion was captured:

- It was noted that the terms of reference being prepared for the Presidents Group does not require review by Engineers Canada's Governance Committee or approval by the Board given that there is no formal reporting relationship between the Presidents Group and the Board.
- Likewise, suggested actions from either the Presidents Group or CEO Group reports are only actioned at the Board's discretion. The process by which regulators may bring issues forward to the Board is outlined in welcome materials to the regulator Presidents from Engineers Canada.
- In the current governance structure, presentations from committees and task forces to the Presidents Group create informal opportunities to share information with the regulators' councils.

3. Consent agenda

3.1 Approval of minutes

THAT the minutes of the December 12, 2022 Board meeting be approved.

3.2 National Position Statements

a) THAT the following new National Position Statements be approved:
   i. Ventilation Systems and Building Management in Reducing Airborne Contaminants
   ii. Federal Regulations of Small Fishing Vessel Design
b) THAT the following updated National Position Statements be approved:
   i. Climate Change and Extreme Weather Events
   ii. The Role of Engineers in Canada's Long-term Economic Recovery

3.3 Appointment of Secretary to the Board

THAT the Board appoint Light Go as Secretary to the Board, the change in office to take effect immediately.

Motion 2023-02-2D
Moved and seconded
THAT the consent agenda motions, except 3.2a(ii), be approved in one motion.
Carried

The Board supported approval of the new National Position Statement, "Federal Regulations of Small Fishing Vessel Design". However, it was suggested that the approved National Position Statement be updated further to include environmental considerations and be brought back to the Board for approval at its meeting in May 2023.

Motion 2023-02-3D
Moved and seconded
THAT the new National Position Statement "Federal Regulations of Small Fishing Vessel Design" be approved.
Carried

ACTION: Staff to consult with the regulators in advance of the May 2023 Board meeting on updating the National Position Statement "Federal Regulations of Small Fishing Vessel Design" to include environmental considerations.

4. Board business / required decisions

4.1 Annual Strategic Performance Report

G. McDonald presented the Annual Strategic Performance Report that was pre-circulated to the Board. Pending the Board's approval, it will be circulated to the Members for information at the Annual Meeting of the Members (AMM) in May. All strategic priorities are currently on track to be completed in 2024, as discussed the day before during the Strategic Foresight Workshop.

No questions or comments were received.

Motion 2023-02-4D
Moved and seconded
THAT the Board approve the 2022 Annual Strategic Performance Report, for circulation to the Members for information at the 2023 Annual Meeting of Members.
Carried

4.2 Board policy updates

A. English, Governance Committee Chair, provided an overview of the Governance Committee's proposed revisions to five (5) Board policies and recommendation to rescind Board policy 7.13. The policies were discussed by the Governance Committee at its meeting on November 16, 2022. Marked up versions of the policies with the proposed changes were pre-circulated to the Board.

The following discussion was captured:

- Through the recent application of policy 4.3 Code of conduct it was noted that investigations may not be warranted for all complaints, nor will they always yield additional information that justify the accompanying costs and resources. Policy 4.3 was thus updated by the Governance Committee to give the complaints review panel the discretion to forgo an investigation, when appropriate. It was suggested that this intent be made clearer in section 4.3.4 of the Policy.
- In the interest of ensuring that the policy sets out a fair complaint process, the Board sought clarification around the complainant's ability to appeal the panel's decision. Staff confirmed that

while the existing policy does not explicitly refer to appeals, it does allow for a complainant to submit their complaint to the full Board for further consideration if they are not satisfied with the panel's decision.

- The Board agreed to approve the policy as presented but with the caveat that the Governance Committee would clarify the intention of section 4.3.4. Complaints process and propose further revisions to the Board, if appropriate.

Motion 2023-02-5D

Moved and seconded

THAT the Board, on recommendation of the Governance Committee, a) approve revisions to the following Board policies:

i. 1.4, Strategic Plan	***vii. 5.4, Communication and support to the Board***
ii. 1.5, About this manual	***viii.5.5, Asset protection***
iii. 4.7, Monitoring of CEO	***ix. 6.2, Board, committee, and task force chair assessment***
iv. 4.11, Board management delegation	***x. 7.11, Consultation***
v. 4.13, Individual Director assessment	***xi. 6.12, HR Committee terms of reference***
vi. 5, Executive duties and limitations	***xii. 7.13, Vaccination for in-person meetings, and***

b) ***Rescind Board policy 7.13, Vaccination for in-person meetings.***

Carried with two-thirds majority

ACTION: At its meeting in March, the Governance Committee will clarify the intention of section 4.3.4 Complaints process and refer any subsequent changes to Board policy 4.3 Code of Conduct to the Board when it meets in May 2023.

4.3 2023 CEO objectives

M. Wrinch, HR Committee Chair, presented the CEO objectives that were discussed by the HR Committee at its meeting on November 24, 2022 and pre-circulated to the Board. The following discussion was captured:

- Staff provided additional details on a new tool to manage the international mobility registers, and the value of implementing "ChatterHigh" to support nation-wide outreach of science in high schools.
- It was noted that the CEO's management of Engineers Canada staff had been included in "Organizational stability, Follow up on results of triennial employee engagement survey". Results of the 2022 employee engagement survey will be presented to the Board at its meeting in May 2023.
- It was noted that when assessing the CEO's 2022 performance, the HR Committee applied a four-point rating scale to the objectives. Further discussion of how success was measured has been planned for the in-camera discussion of the HR Committee's recommendations for CEO assessment (short-term incentive).

Motion 2023-02-6D

Moved and seconded

THAT the Board, on recommendation of the HR Committee, approve the 2023 CEO objectives.

Carried

4.4 Board and individual Director assessment

M. Wrinch presented the proposed content of the annual survey for 2023 that had been prepared with the help of governance consultants, tng, reviewed by the HR Committee at its meeting on November 24 and pre-circulated to the Board.

Directors were satisfied with the proposed survey and requested benchmark results against other similar organizations.

The Board requested two revisions to the survey:

- That in the preamble to the survey, a statement be added noting who will have access to the data collected and the retention period.
- That question number 27, "The Board does its best to promote inclusion, diversity, and equity throughout the organization and the Board", be revised to align with the wording of other questions by removing the reference to best efforts.

Motion 2023-02-7D
Moved and seconded
THAT the Board, on recommendation of the HR Committee, approve the content of the Board self-assessment and the individual Director assessment surveys, as amended.
Carried

ACTION: Staff to work with tng to update the Board self-assessment and individual Director assessment surveys to include in the preamble information about the confidential handling and retention period of the data collected.

ACTION: Staff to advise tng to remove references to best efforts in question number 27 in the pre-circulated survey questions.

4.5 Approval of the 'Temporary exemption for students going on international exchange' policy

P. Klink, CEAB Chair, requested approval of the temporary exemption for students going on international exchange, which removes accreditation barriers. The Board last discussed the policy at its meeting in December 2022. A briefing note, the proposed policy, and correspondence about the policy from K. Baig, the CEO Group and Engineering Deans Canada, were pre-circulated.

The following discussion was captured:

- It was confirmed that some preliminary work had been done to establish metrics. Once the policy is approved further work will be undertaken to establish simple metrics beginning with the number of students going on foreign exchange and whether the number increases or decreases. Currently, information collected from institutions about foreign exchanges is incomplete. Moreover, the CEAB will be interested in tracking how the home institutions follow the processes and procedures outlined in section 7.1 of the policy to engage with the students who go on exchange and ensure that they satisfy the criteria to pass their program.
- It was noted that foreign exchanges may contribute to graduate attributes.

- Directors noted that the proposal addresses a long-standing issue and is reasonable while Strategic Priority 1 continues.
- The risks and mitigating measures were shared with the Board by Engineering Deans Canada (EDC) and the CEO Group.
- K. Deluzio, Chair, EDC, supported the proposed policy and thanked those involved in developing the temporary solution. Furthermore, it was noted that students should be informed of the policy which may increase in foreign exchanges in the coming years.

Motion 2023.02-8D
Moved and seconded
THAT the Board, on recommendation of the CEAB, approve the new policy entitled 'Temporary exemption for students going on international exchange', to be included as Appendix 18 within the 2023 CEAB Accreditation Criteria and Procedures.
Carried

5. Reports

Board committees provided updates, with supporting slide presentations made available on the Engineers Canada website and within the Directors' meeting packages in OnBoard.

5.1 CEAB

P. Klink, CEAB Chair, provided an update on the CEAB's work. The following discussion was captured:

- Directors who had recently gone on accreditation visits acknowledged the CEAB Chair for the quality of the preparation and coordination put into accreditation visits.
- In response to a question, it was noted that the reduced number of accreditation visits planned for 2023-2024 was the result COVID-19 and changes to schools programs.
- A question was raised about the process by which the CEAB would be informed of any changes at the regulator level that would impair programs from meeting CEAB accreditation requirements. Professional Engineers Ontario's (PEO) decision to sunset the Engineering Intern (EIT) program, and how that decision relates to criteria related to the professional status of faculty memberswas discussed. It was noted that the CEAB was informed of PEO's decision and that it was being considered by the CEAB's executive and Policies and Procedures Committee. While there is no required process for the regulators to share forthcoming changes with Engineers Canada, regulators are invited to observe CEAB meetings and, in doing so, encouraged to share challenges and changes in their work.
- K. Deluzio noted potential implications of PEO's decision on engineering faculty, and subsequently accreditation that should be addressed through the strategic plan. P. Klink confirmed the issue would be discussed by the Policies and Procedures Committee and CEAB at their spring meetings.
- It was suggested that thought be given as to the role of engineering licensure in accredited undergraduate engineering education.

5.2 CEQB

M. A. Hodges, CEQB Chair, provided an update on the CEQB's work. The Board's discussion centered around the feasibility study on alternative methods of academic assessment for non-CEAB applicants.

- It was noted that the study aimed to collectively understand the tools used by regulators across the country. To date, the study has included an environmental scan and comparison of Canadian engineering regulation practices with that of the practices of other professions in Canada and of engineers in other countries.
- At this time, the CEQB's work is not linked with the Collaboration Task Force albeit similar themes were emerging from the two groups' respective work.

5.3 FAR Committee

A. Arenja, FAR Committee Chair, provided the update the FAR Committee's work. No questions were received.

5.4 Governance Committee

A. English provided an update on the Governance Committee's work. In addition to the updates presented in the pre-circulated slides, A. English noted that the Governance Committee's workload has increased and requested an additional member to the committee for 2023-2024. As noted by G. McDonald, it is important to consider how the increase in committee size may increase staff workload and whether changing the cadence of policy review may reduce the burden on volunteers and staff resources. It was confirmed that the review period for some policies had been extended for three years.

5.5 Human Resources (HR) Committee

M. Wrinch provided the update on the HR Committee's work and noted that further items will be addressed during the in-camera portion of the meeting. No questions were received.

5.6 Collaboration Task Force

C. Bellini, Collaboration Task Force Chair, provided an update on the Collaboration Task Force's work. The following discussion was captured:

- Collaboration and harmonization across the country was noted to be of value to both Engineers Canada and the regulators.
- Directors were encouraged to attend the consultations taking place in their home province. Directors representing the task force will also be in attendance.
- In response to a question, it was suggested that attendees prepare for the consultations by reviewing the position paper prepared by the Task Force and presented to the Board at its meeting in December 2022.
- Consultations with the regulators will continue until June 2023. A workshop with all regulators will take place at the October Board meetings, from which the Task Force will prepare a statement, as appropriate. The Board will be presented with the statement in February 2024. The framework for harmonization or collaboration will ideally be presented to the CEO Group at their meeting in July 2024.

5.7 Board's 30 by 30 Champion

T. Joseph, the Board's 30 by 30 Champion, provided an update on Strategic Priority 2.1, Accelerate 30 by 30. The contribution of staff in managing and moderating the working groups was highlighted in the update.

Through its discussion, the Board noted the importance of engaging co-op employers working with higher education institutions, large consulting firms and provincial utilities to become 30 by 30 champion and partners. Such employers have a critical role in creating work-place cultures that are welcoming and offer meaningful work to those who identify as women. Staff confirmed that two thirds of higher education institutions have become 30 by 30 champions and participate in various ways, including sharing areas for improvement. Likewise, efforts have been made to engage potential employers in 30 by 30 activities, including the forthcoming conference in May.

6. Next meetings

The next Board meetings are scheduled as follows:

- April 5, 2023 (virtual)
- May 26, 2023 (Halifax, NS)
- June 19, 2023 (Ontario)
- October 5, 2023 (Ottawa, ON)
- December 4, 2023 (virtual)
- March 1, 2024 (Ottawa, ON)

The next committee and task force meetings are scheduled as follows:

- FAR Committee: March 1, 2023 (virtual)
- Governance Committee: March 8, 2023 (virtual)
- FAR Committee: March 10, 2023 (virtual)
- Collaboration Task Force: March 15, 2023 (virtual)
- HR Committee: March 30, 2023 (virtual)
- FAR Committee: May 11, 2023 (virtual)
- Strategic Planning Task Force: May 16, 2023 (virtual)

7. In-camera sessions

7.1 Board Directors and CEO

Motion 2023-02-9D
Moved and seconded
THAT the meeting move in-camera and be closed to the public at the recommendation of the Board. The attendees at the in-camera session shall include Board Directors, the Engineers Canada CEO.
Carried

7.2 Board Directors only

Motion 2023-02-10D
Moved and seconded
THAT the meeting move in-camera and be closed to the public at the recommendation of the Board. The attendees at the in-camera session shall include Board Directors and HR Committee members.
Carried

8. Closing

With no further business to address, the meeting closed at 2:30pm ET.

Minutes prepared by J. Bard Miller for:

Kathy Baig, MBA, FIC, ing., DHC, President Light Go, Acting General Counsel and Corporate Secretary

Draft MINUTES OF THE 218th ENGINEERS CANADA BOARD MEETING

April 5, 2023, 11:00am-1:00pm (ET)

Virtual delivery: Zoom

The following Directors were in attendance:	
K. Baig, President (Chair), Québec	C. Cumming, Nova Scotia
N. Hill, President-Elect, Ontario	A. English, British Columbia
D. Chui, Past President, Ontario	S. Jha, Northwest Territories and Nunavut
A. Anderson, Yukon	T. Joseph, Alberta
A. Arenja, Ontario	D. Nedohin-Macek, Manitoba
N. Avila, Alberta	M. Rose, New Brunswick
M. Belletête, Québec	D. Spracklin-Reid, Newfoundland and Labrador
E. Barber, Saskatchewan	M. Sterling, Ontario
C. Bellini, Ontario	N. Turgeon, Quebec
V. Benz, Alberta	J. Van der Put, Alberta
G. Connolly, Prince Edward Island	M. Wrinch, British Columbia
The following Directors sent regrets:	
A. Baril, Québec	
The following CEO Group Advisor sent regrets:	
L. Daborn, Chair, CEO Group	
The following Direct Reports to the Board were in attendance:	
M. A. Hodges, Chair, CEQB	G. McDonald, CEO
P. Klink, Chair, CEAB	L. Go, Acting General Counsel and Corporate Secretary
The following observers were in attendance:	
D. Abrahams, Staff, PEO	P. Mann, CEO, Engineers Nova Scotia
F. Collins, Vice-Chair, CEQB	J. Quaglietta, CEO, PEO
L. Doig, President, APEGA	S. Sternbergh, Vice-President, EngYK
J. Landrigan, CEO, Engineers PEI	H. Yang, CEO & Registrar, Engineers & Geoscientists BC
The following staff were in attendance:	
J. Bard Miller, Manager, Governance and Board Services	R. Melsom, Manager, CEQB
J. Chou, Governance Coordinator	D. Menard, Director, Finance
L. El-Tawil, Translator	S. Price, Executive Vice President, Regulatory Affairs
I. Flamand, Qualifications Specialist	J. Southwood, VP, Corporate Affairs & Strategic Partnerships
B. Gibson, Manager, Communications	M. Warken, Manager, CEAB

1. Opening

1.1 Call to order and approval of agenda

Engineers Canada President, K. Baig, called the meeting to order at 11:03am ET. Participants were welcomed and the land was acknowledged.

Motion 2023-04-1D
Moved and seconded
THAT the agenda be approved and the President be authorized to modify the order of discussion.
Carried

Meeting rules and norms were reviewed, as included in the agenda book.

1.2 Declaration of conflict of interest

No conflicts were declared. Participants were reminded to declare a conflict at any time during the meeting, as necessary.

2. Board business / required decisions

2.1 2022 audited financial statements

A. Arjena, Finance, Audit and, Risk (FAR) Committee Chair, presented the pre-circulated statements. The following discussion was captured:

- It was confirmed that the increase in secretariat service expenses was due to the post-pandemic resumption of travel for in-person meetings of the Engineers Canada Board, CEAB and CEQB.
- It was noted that Engineers Canada's investments had performed relatively well compared to major markets indices, despite the losses. At its meeting on March 1, 2023, the FAR Committee received a presentation by RBC PH&N Investment Counsel. It was noted in the presentation that there had been a drop of 30 per cent in major markets, whereas Engineers Canada's investments were only down by 8.9 per cent.
- Management reported that since the end of 2022, Engineers Canada's investments had increased by 4 per cent and there are no issues meeting short-term cash requirements.
- It was confirmed that the revenue captured under national programs includes the Professional Engineers Ontario (PEO) portion of the TD affinity program.

Motion 2023-04-2D
Moved and seconded
THAT the Board, on recommendation of the FAR Committee, approve the Engineers Canada financial statements for the year ending December 31, 2022, as audited by KMPG LLP, and be placed before the Members at the 2023 Annual Meeting of Members.

3. CEQB products

3.1 Engineers Canada paper on professional practice in software engineering

M.A. Hodges, CEQB Chair, presented the pre-circulated paper. The following discussion was captured:

- It was confirmed that the Association of Professional Engineers and Geoscientists of Alberta (APEGA) had reviewed the draft paper and requested that the Board consider its approval at the current meeting. The paper will be of use to APEGA in their regulatory activities.
- Pending approval, the paper will undergo legal review.
- Several task force members wanted to indicate in the briefing note that there could have been further industry consultation. However, it was clarified that the paper had been reviewed in accordance with Board policy 9.2, Qualifications Board products.

Motion 2023-04-3D
Moved and seconded
THAT the Board, on the recommendation of the CEQB, approve the revised Engineers Canada Paper on professional practice in software engineering (public distribution).

4. CEO update

4.1 Update on TD Affinity program

G. McDonald, CEO, Engineers Canada, informed the Board that PEO has agreed to sign on as an affinity partner to the TD Home and Auto Insurance Program. This agreement will give PEO registrants direct access to preferred insurance rates though their member portal in exchange for sponsorship funds. Since 2018, the PEO portion of the affinity program, which amounted to approximately $2 million, had gone to Engineers Canada's unrestricted reserves. Engineers Canada's operating budget for 2023 will not be impacted; however, there will be an impact on the reserves. G. McDonald will provide regular updates to the Board.

The following discussion was captured:

- It was confirmed that in 2022 Engineers Canada had received the entire portion of PEO's funds, which were accounted for in the financial statements. In 2023, 75 per cent of the affinity program funds will go to PEO and TD.
- The FAR Committee has discussed this potentiality at its meetings and with the Board when reviewing the 2025 Per Capita Assessment.
- Given the impact on the reserves, future strategic projects may need to be scaled back.
- It was noted that without PEO's funds in 2022, Engineers Canada would have been in a further deficit position.

4.2 Presentation of new marketing video

G. McDonald introduced a new marking video that will be shared with the public during the week of April 10, 2023. The video was produced as part of a national marketing campaign, Building Tomorrows, that is part of Engineers Canada's work on Strategic Priority 2.2: Reinforce trust and the value of licensure. The campaign is the culmination of over 14 months of effort between Engineers Canada and the engineering regulators. The following discussion was captured:

- It was noted that 40 per cent of the campaign will be televised and the remaining portion is in digital display apps, such as YouTube. Outdoor advertising was considered but television was ultimately selected given its greater exposure.
- It was confirmed that the marketing firm will monitor the campaign and provide regular updates on its success to Engineers Canada.

5. Next meetings

The next Board meetings are scheduled as follows:

- May 26, 2023 (Halifax, NS)
- June 19, 2023 (Ontario)
- October 5, 2023 (Ottawa, ON)
- December 4, 2023 (virtual)
- March 1, 2024 (Ottawa, ON)
- April 3, 2024 (virtual)

The next committee and task force meetings are scheduled as follows:

- FAR Committee: May 11, 2023 (virtual)
- Strategic Planning Task Force: May 16, 2023 (virtual)
- HR Committee (2023-2024): May 27, 2023 (Halifax, NS)
- All 2023-2024 committees and task forces: June 19, 2023 (Ontario)

6. In-camera sessions

6.1 Board Directors and CEO

Motion 2023-04-4D
Moved and seconded
THAT the meeting move in-camera and be closed to the public at the recommendation of the Board. The attendees at the in-camera session shall include Board Directors, the Engineers Canada CEO.
Carried

6.2 Board Directors only

Motion 2023-04-5D
Moved and seconded
THAT the meeting move in-camera and be closed to the public at the recommendation of the Board. The attendees at the in-camera session shall include Board Directors and HR Committee members.
Carried

7. Closing

With no further business to address, the meeting closed at 11:58 am ET.

Minutes prepared by J. Bard Miller for:

Kathy Baig, MBA, FIC, ing., DHC, President Light Go, General Counsel and Corporate Secretary

June Board workshop – Action plan resulting from June 21 roundtable discussion
Status updated on April 14, 2023

Priority (what was said at the workshop)	Action (when and by whom)	Additional notes	Status
Informal Board assessment process / meeting feedback • The Board should take time during the final September 29 in-camera session to do a roundtable assessment of the meeting, the chair, and the Board. • Directors should be 'thick-skinned' and see how this goes. • Everyone should be given 90 seconds to say what was good and what was bad about the meeting.	September 29, 2022 - **Board chair** to facilitate roundtable assessment discussion during the Board's in-camera session.	'Meeting evaluation' has always been included as part of the Board's agenda, to be held in its final in-camera session. For the September Board agenda, staff have included the words 'roundtable discussion' to remind Directors of this purpose.	Complete – Inclusion on future agendas to be considered.
Observers at meetings • Compile a history reviewing the reasons for CEOs and Presidents to attend Engineers Canada Board meetings. • Assemble a list of pros and cons of this practice. • Assemble a list of non-binary options for the Board to consider (e.g. maybe the observers just come for part of each Board meeting). • Consider and incorporate feedback from CEO Group.	November 16, 2022 - **Governance Committee** to review and consider the issue of observers at Board February 23, 2023 – Governance Committee's findings/recommendations presented to the **Board** for consideration/approval	This item has been added to the Governance Committee's 2022-2023 workplan.	Complete – Governance Committee discussions on January 14 and March 8, 2023. Board discussions on February 23 and May 26, 2023.
Directors should be placed on committees in their first year on the Board	May 27, 2023 – **HR Committee** to ensure all new and continuing Directors are placed on a committee or task force	For the next 2 years, it is guaranteed that all Directors will be on at least one cttee or task force, given the addition of the SPTF and CTF. NB – There is no Board policy that covers whether Directors shall serve	In progress – Staff have followed this direction in the committee appointment proposals to be considered by the HR Committee on May 27, 2023.

Priority (what was said at the workshop)	Action (when and by whom)	Additional notes	Status
		on a cttee or not, however the Board's position on this has varied over the past few years. The 2019-2020 HR and Governance committees considered this issue and elected to consider each candidate's involvement on cttee's on a case by cases basis (source: Minutes of HR Committee's March 31, 2020 meeting / GC's recommendations (internal doc)).	
Desired training for chairs • Parliamentarian, to assist chairs with meeting rules • Training/coaching to assist with having difficult conversations and/or providing constructive feedback	Spring 2023 – This training can be sourced by **staff**, depending on the interests of chairs.	The HR Committee has approved a budget of $8,000 for general 'facilitation training for incoming chairs' in 2023.	In progress – General training to be included in the Director training offered to the full Board in May. Staff are exploring additional virtual training after committee chairs are selected for 2023-2024.
Assessment surveys • For the peer-assessment surveys, it would be helpful if Directors knew, in advance, who (among their peers) they will be asked to evaluate that year so that they can pay closer attention to the performance of those individuals and provide more meaningful feedback to them. • Ask Directors to write a narrative with their feedback – e.g. state who they are and how long they've served on the Board, what committees they sit on, etc.	September 8, 2022 - Chair assessment survey to be reviewed by the **HR Committee** and the committee will also consider whether and to what extent an external consultant may assist with the assessments. September 29, 2022 – **HR Committee chair** will introduce to the Board, in the HR Committee's update slides, the timing and purpose of the different assessments, the expectations that all Directors complete the surveys,	Re: Assistance on Board assessments from an external consultant: This item has been added to the HR Committee's 2022-2023 workplan. Re: Requesting narratives: All of the Board's assessment surveys include and request open feedback in the form of comment boxes. This item may be less about survey design, and more a matter of the HR Committee chair and the President encouraging respondents, before the survey opens, to take the opportunity and provide fulsome comments.	Complete – Chair assessment surveys were reviewed and approved by the HR Committee and the Board at their respective meetings on September 8 and December 12, 2022; the survey was open between December 14 and January 5. Results were shared by the President-elect. Board self-assessment and the Director self- and peer-assessment surveys were reviewed and approved by the

Priority (what was said at the workshop)	Action (when and by whom)	Additional notes	Status
• Expectation should be that there is 100% participation on the surveys, and Directors should hold each other accountable. Reiterate to Directors, during orientation and before surveys are published, that one of the requirements of being a Director is that everyone must complete the annual evaluations. • Review frequency and content of Board assessments, and consider whether there is merit in having an external consultant support the HR Committee to conduct and/or analyze and deliver the results of the assessments.	and identify the individuals who will be peered in that year. <u>December 12, 2022</u> – Chair assessment survey is presented to the **Board** for approval. • **HR Committee chair and President** to reinforce to Directors the importance of responding to the survey, and encouraging respondents to provide more expansive feedback in the open comments section. <u>November 24, 2022</u> – Board self-assessment and the Director self- and peer-assessment surveys are reviewed by the **HR Committee** February 23, 2023 – Board self-assessment and the Director self- and peer-assessment surveys are presented to the Board for approval • **HR Committee chair and President** to reinforce to Directors the importance of responding to the survey, and encouraging respondents to provide more expansive feedback in the open comments section.	All of the actions noted to the left will continue on an annual basis.	HR Committee and the Board at their respective meetings on November 24 and February 23; the survey was open from February 27 to March 13. Board self-assessment results were shared with the HR Committee and Board on March 30 and May 26, respectively. Self and peer-assessments shared directly by the President-Elect. Orientation slides updated to include information about assessments.

Priority (what was said at the workshop)	Action (when and by whom)	Additional notes	Status
	March 30, 2023 – **HR Committee** to add a slide(s) in the orientation materials for new Directors, informing them of the timing and nature of the assessments and advising of their duties to complete the surveys		
Extending the term length for individuals occupying the Engineers Canada President and the CEAB and CEQB chair roles • The EC President and CEAB/CEQB chairs rotate annually, and this can make the job of chair very difficult. • Consider extending the mandate of these positions to 2 years, ensuring there is a strong chair in place to lead the Board.	March 8, 2023 – The **Governance Committee** will review the issue and make a recommendation, through policy changes, regarding increasing the terms for Engineers Canada's President and the CEAB/CEQB chairs. May 23, 2023 – The **Board** will be presented with the Governance Committee's analysis/recommendation regarding extending the terms together with proposed changes to the policies.	This item has been added to the Governance Committee's 2022-2023 workplan. Re: Extending the term for CEAB/CEQB chairs: Until September 2018, the terms for CEAB and CEQB chairs was 2 years. The length of the chairs' terms changed as a result of the Nominations Task Force's final recommendations, which were approved by the Board at its September 26, 2018 meeting, resulting in changes being made to the Board policies.	Complete – The issue was discussed by the Governance Committee at its meeting on March 8 and will be discussed by the Board on May 23, 2023.
Concern with wording of accreditation strategic priority • Should Board be considering relevancy of accreditation given that 50% of applicants are foreign-trained? Should Board be looking at accreditation differently? • Are HEIs partners, and not stakeholders? • Structurally, is there a problem with having the people who set policy	Ongoing - It was noted that this area, and the questions raised, are being contemplated and addressed as part of the current Strategic Plan.		Ongoing • What accreditation looks like and who it serves is under active consideration. The development of a national academic requirement for licensure will allow Engineers Canada to offer alternative ways of

Priority (what was said at the workshop)	Action (when and by whom)	Additional notes	Status
around accreditation be the ones auditing HEIs? Should the two functions reside in the same area?			supporting licensure by regulators. • the HEIs are collaborators on the project, with deans participating in all task forces and one the steering committee, and academics making up the largest single group at our sessions (foresight workshop and virtual simulations) • This governance issue is outside the scope of the current project, but could be considered in the 2025-2029 strategic plan

BRIEFING NOTE: For decision

Consultation report	3.3
Purpose:	Provide an annual update on 2022 consultations
Link to the Strategic Plan / Purposes:	Board responsibility: Sustain a process to engage with Regulators through regular communication that facilitates input, evaluation, and feedback
Link to Corporate Risk Profile:	Decreased confidence in the governance functions (Board risk)
Motion(s) to consider:	*THAT the 2022 consultation report be approved as distributed*
Vote required to pass:	Simple majority
Transparency:	Open session
Prepared by:	Mélanie Ouellette, Manager, Strategic and Operational Planning
Presented by:	Nancy Hill, Director from Ontario, President-Elect

Problem/issue definition

- Launched in 2019, the consultation program was developed in response to Regulators' frustration that they did not know what Engineers Canada was doing and they did not have enough say in programs, products, and services.
- The program provides a structured, standardized method for acquiring feedback:
  - A staff review is conducted to distribute consultation events across the year (when possible);
  - Regulators are notified of upcoming consultations in the fall;
  - Upcoming consultations are posted on the website at the beginning of the year;
  - All consultations are posted on the public or members-only website, depending on their nature;
  - Received feedback is shared on the public or members-only website; and,
  - An annual consultation report is provided to the Board on past year's activities (Appendix 1).
- In September 2022, Engineers Canada met with the CEO Group to identify potential improvements to the consultation program. It was agreed that staff could provide additional information to CEOs in their consultation emails to better direct requests internally, reduce duplication of efforts where unnecessary, and quickly decide whether they want to contribute or not. This revised email template was implemented in March 2023.
- Since September 2022, quarterly planned consultations have been added to the CEO Group agenda books so that they can have better visibility of when their feedback will be requested and plan accordingly, should they choose to participate.
- The 2022 employee engagement survey highlighted opportunities to reduce duplication of efforts and gain efficiencies in the consultation program.

Proposed action/recommendation

- That the 2022 consultation report be approved as distributed.

Other options considered:

- No other options were considered as this is a requirement under Board policies 5.1 *Relationship with the Regulators*, and 7.11 *Consultation*.

Risks

- There is no risk associated with this report.

Financial implications

- There is no extra cost associated with this report.

Benefits

Engineering Regulators:

- Can provide input into the development and review of products, services and initiatives undertaken by Engineers Canada.
- Have visibility on how decisions are made in the development and review of products, services and initiatives that have an impact on their organizations.

Consultation

- No committees nor external stakeholders were consulted.

Next steps (if motion approved)

- Improvements will continue to be implemented for the benefit of Regulators and staff.
- Engineers Canada will follow-up with the CEO Group in September 2023 to assess if new improvements are working and/or if additional improvements should be made.
- Board directors can request access to the members-only site if interested by contacting Mélanie Ouellette, Manager, Strategic and Operational Planning at melanie.ouellette@engineerscanada.ca.

Appendix

- **Appendix 1:** 2022 consultation report

2022 Consultation Report

ABOUT THE CONSULTATION PROGRAM

As stated in Board policy 7.11, consultations are required for all new programs, products, and services developed by Engineers Canada, and for reviews and significant re-designs of existing programs. All public and restricted access consultation information is available on the consultation site (log-in required to see all consultations).

PURPOSE

The purpose of the consultation report is to review the results of the 2022 consultation plan and the achievement of the outcomes of the consultation program. This is the third progress report after the first full year of implementation. This report also provides an overview of ongoing improvements made to measure and achieve the outcomes for the consultation program highlighted below.

RESULTS

Engineers Canada had originally planned to conduct 25 consultations in 2022. In total, 22 were executed (17 of which were planned and five that were ad hoc), which means that 84% of the planned consultations were executed. This percentage was 52% in 2021 and 88% in 2020. The decrease in 2021 is due to resource changes, that resulted in some consultations being delayed to the following year.

Consultations are conducted by email, in meetings, and in hybrid mode where both delivery mechanisms are used. Email consultations typically target Regulators individually, while consultations conducted in meetings can ask for the opinion of the group as well as that of individuals.

In 2022, only two consultations did not seek Regulators' feedback, which represents 90% of all consultations. The two consultations that did not include Regulators were an accreditation consultation for Deans specifically as well as a CEQB consultation for CEAB members on the feasibility study for the assessment of non-CEAB applicants (Regulators were consulted separately). In 2020 and 2021, Regulators were invited to participate in all consultations.

In 2022, 15 out of the 21 (71%) consultations were "Board consultations", meaning that they were conducted by the Board, CEAB or CEQB. Board consultations represented 53% of all consultations held by Engineers Canada in 2021. The increase results from the number of consultations held in support of the 2022-2024 strategic plan.

STRATEGIC OUTCOMES

The desired strategic outcomes of the consultation program are that:

1. Programs, products, and services are informed by Regulator input.
2. Regulators have input into the development and modification of Engineers Canada's programs, products, and services.
3. Engineers Canada uses Regulator time and resources effectively.
4. There is greater transparency between Engineers Canada and Regulators.

In addition, the CEO has an operational outcome for the program to enable all parts of Engineers Canada to engage designated stakeholders as per Board policy 5.1. Relationships with the Regulators.

CONTINUOUS IMPROVEMENTS

Engineers Canada is committed to work with Regulators to ensure that the consultation program meets their expectations and that they feel that they have a meaningful influence on our products, services and initiatives. The following continuous improvements are under development/being implemented:

1. Making consultations more efficient and accessible for CEOs by:
    a. Including consultations in the CEO weekly emails;
    b. Adding all quarterly consultations to the CEO Group's agenda books;
    c. Improving the email sent to Regulators when a consultation opens so that they can direct requests more efficiently and reduce duplication of work within their jurisdictions; and,
    d. Establishing an annual check point with CEO Group on the effectiveness of the consultation program.
2. Conducting a three-year evaluation of the consultation program and refining measures based on lessons learned and collected data.
3. Streamlining and reducing duplication of work to make the execution of the consultation program more efficient for staff.

ANNUAL EVALUATION

The following section provides an evaluation of progress against the above outcomes.

1. Programs, products, and services are informed by Regulator input

THIS MEANS: feedback received from the Regulators during consultation is incorporated into the final versions of programs, products, and services.

- Regulators' feedback was incorporated in the revised and final products. Over the last three years, when major feedback was received, all feedback was compiled, responded to and shared with Regulators, with the timelines varying according to the development cycle of the documents.
- Received feedback on 2022 consultations is already available for 7 documents. (see members-only consultation page, log-in required).

2. Regulators have input into the development and modification of Engineers Canada's programs, products and services

THIS MEANS: Regulators are afforded an opportunity to provide feedback.

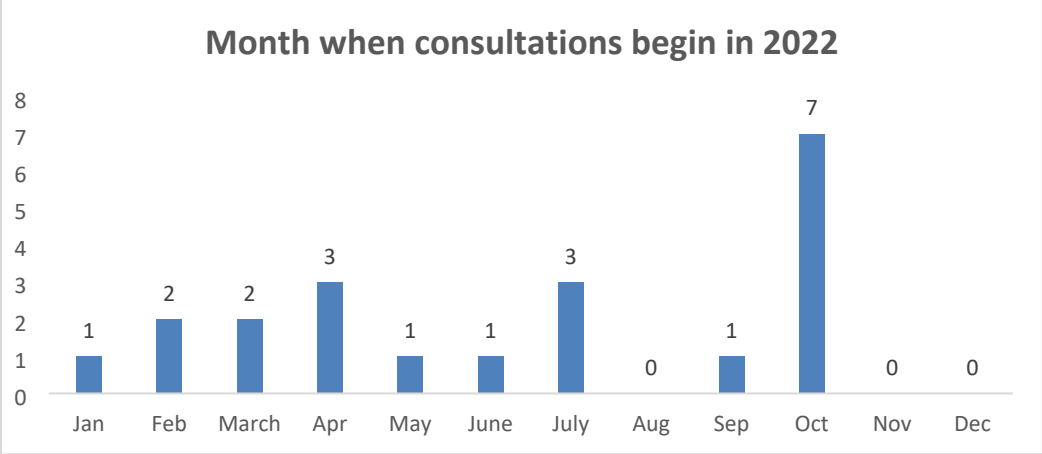
- 90% of the consultations involved a group of Regulators (Presidents, CEOs, and/or Officials Group)
- All Regulator consultations were also distributed by email.

3. Engineers Canada uses Regulator time and resources effectively

THIS MEANS: the program gives Regulators an opportunity to plan their resources, is predictable, and does not overwhelm them with overlapping consultations.

- 81% of the consultations were planned, compared to 73% in 2021, and 88% in 2020 (average of 81% consultations annually). Variations year over year are attributed to resource changes and refinement in process.
- Consultations for documents typically last at least six weeks to allow regulators and stakeholders to answer. The following figure highlights the distribution of the start date of consultations in 2022:

Table 1: Months when consultations begin in 2022



4. There is greater transparency between Engineers Canada and Regulators

THIS MEANS: Regulators have access to the information needed to participate in a consultation on time, and that the results of the consultation are available to them.

- All Regulator consultations were distributed by email, which provided them with an opportunity to participate in the consultation on time, and influence how decisions are made by Engineers Canada
- Results of a consultation are only posted when the review or final document is completed and/or approved. Sometimes, there are multiple consultations for the same document. This creates an important delay between when Regulators participate and when they can see results. Nevertheless, 7 feedback tables are already available out of the 21 consultations that took place in 2022.

NEXT STEPS

- Engineers Canada staff will continue improving the consultation program as part of continuous improvements efforts.

BRIEFING NOTE: For information

Annual list of partnership organizations	3.4
Purpose:	To update the Board on Engineers Canada partnerships with external organizations
Link to the Strategic Plan / Purposes:	Work contributes to various strategic priorities, operational imperatives, and Board responsibilities
Link to the Corporate Risk Profile:	Decreased confidence in the governance functions
Prepared by:	Kim Bouffard, Manager, Belonging and Engagement Jeanette Southwood, Vice President, Corporate Affairs and Strategic Partnerships
Presented by:	Gerard McDonald, Chief Executive Officer

Background

- Board policy 7.4, *Board Relationship with External Organizations*, directs the Engineers Canada CEO to submit periodically to the Board, for information, a list of partnership relationships with external organizations. In accordance with the policy, this list shall include the cost, if any, as well as the purpose of the relationship and its outcomes to date.
- Board policy 7.4 defines a partnership as "any relationship between Engineers Canada and an external organization that has an impact on achievement of the Strategic Plan or a significant financial or resource impact."

Status update

- A list of Engineers Canada's current partnerships has been prepared and is included as an appendix. The list excludes operational service providers and vendors, and our affinity partners.

Next steps

- Partnerships are reviewed periodically by the Engineers Canada CEO to ensure that they continue to meet the criteria in Board policy 7.4, deliver on the intended purpose, and deliver value through achievement of the intended outcomes.
- An updated partnership list will be submitted to the Board, for information, in May 2024.

Appendix

- **Appendix 1:** List of partnership organizations

Board policy support document

List of Engineers Canada partnerships with external organizations

A partnership is defined as "any relationship between Engineers Canada and an external organization that has an impact on achievement of the Strategic Plan or a significant financial or resource impact."

Current Engineers Canada partnerships
Please note: the partnership list excludes service and vendor providers and our affinity partners.

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
ABET (Accreditation Board for Engineering and Technology)	**Nature of commitment**: Informal **Cost:** ~$7,000 (participation in F2F meeting)	**Increase organization success:** Ongoing exchange of knowledge and access to like organization has informed and guided accreditation.	CP1, SP1.1, CP7
American Indian Science and Engineering Society (AISES)	**Nature of commitment:** Sponsorship **Cost:** $5,000 (Travel sponsorship for students to attend annual conference)	**Increase organizational success:** Sharing resources and capacity to support Indigenous engineers and students.	CP9
AISES (American Indian Science and Engineering Society) in Canada	**Nature of commitment**: Sponsorship **Cost:** $5,000 (Travel sponsorship for students to attend annual conference)	**Increase organizational success:** Ongoing exchange of knowledge and understanding of needs of Indigenous engineers. **Drive broader social and systems change:** Building community and supporting success for Indigenous engineers.	CP9
Association of Accrediting Agencies of Canada	**Nature of commitment:** Membership **Cost:** $920 (membership)	**Increase organizational success:** Ongoing exchange of knowledge and access to network of peers has informed and guided accreditation.	CP1, SP1.1

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
Association of Consulting Engineering Companies-Canada (ACEC)	**Nature of commitment:** Informal **Cost**: $0	**Drive broader social and systems change:** 30 by 30 Champion and working on supporting the increase of women in engineering.	CP5, CP8, SP2.1
Black Engineers of Canada	**Nature of commitment:** Formal **Cost**: $15,000	**Increase organizational success:** Ongoing exchange of knowledge and understanding of needs of Black engineers. Specifically, we provided one-time funding to support the development and launch of their website and to hire a consultant to support research and development of strategic plans for charitable status. **Drive broader social and systems change:** Building community and supporting success for Black engineers.	CP6, CP9, SP1.1
Canadian Academy of Engineering (CAE)	**Nature of commitment**: Formal **Cost**: $20,000	**Increase organizational success:** Ongoing exchange of knowledge and access to network of engineering experts for participation in Future City and National Engineering Month, and in the development of National Position Statements.	CP5, CP7, CP8, CP9, SP2.1
Canadian Council for Aboriginal Business (CCAB)	**Nature of commitment:** Membership **Cost:** $1,000	**Increase organizational success:** Increase access to Indigenous businesses, leaders, professionals, and reconciliation best practices. **Drive broader social and systems change:** Building awareness and supporting success for Indigenous engineers.	CP9
Canadian Centre for Women in Science, Engineering, Trades and Technology (WinSETT)	**Nature of commitment**: Sponsorship **Cost**: $0	**Increase organizational success:** Able to increase accessibility of WinSETT Leadership Program for women in engineering. **Drive broader social and systems change:** Supporting SP2.1.	CP9, SP2.1

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
Canadian Chamber of Commerce	**Nature of commitment:** Membership **Cost:** $3,500	**Increase organizational success:** Ongoing exchange of knowledge and access to network of peers has informed and guided work related to public policy, government relations, regulatory research and foreign credential recognition.	CP5, CP6, CP7
Canadian Coalition of Women in Engineering, Science, Trades and Technology (CCWESTT)	**Nature of commitment**: Sponsorship **Cost**: $1,000 Member at Large position for Engineers Canada on CCWESTT Board	**Maximize resources:** Able to provide women in engineering a national conference, networking opportunities, and professional development. **Increase organizational success:** Ongoing exchange of knowledge and access to network of organizations supporting women in engineering. **Drive broader social and systems change:** Supporting SP2.1.	CP5, CP8, CP9, SP2.1
Canadian Engineering Education Association (CEEA)	**Nature of commitment**: Sponsorship **Cost:** $20,000	**Increase organizational success:** Direct access to Associate Deans, Faculty, and other staff engaged in the accreditation system, including involvement in networking groups for the development and implementation of graduate attribute/continual improvement systems. Supports knowledge exchange, access to Canadian scholarship in engineering education, provides an annual opportunity to provide training to higher education institutions (HEIs) and potential volunteers. In-person communication vehicle by having a physical presence in the Canadian engineering education space. Access to special interest groups (SIGS) related to Engineers Canada's Strategic Plan and goals.	SP1.1, CP1, CP9
Canadian Engineering Memorial Foundation (CEMF)	**Nature of commitment**: Support for annual awards gala. Note that there was no gala in 2020 or 2021 **Cost:** $1,000 (photographer), $6,000-$7,000 CEMF Dinner	**Maximize resources:** Providing space at Fall Board meeting for CEMF gala dinner. **Drive broader social and systems change:** Supporting women in engineering.	CP9, SP2.1

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
Canadian Federation of Engineering Students (CFES)	**Nature of commitment:** Letter of understanding, and sponsorship of the CFES' four key meetings: Leadership Congress, Conference on Diversity in Engineering, Conference on Sustainability in Engineering, and the Canadian Engineering Competition **Cost:** $30,000	**Increase organizational success:** Access and direct engagement of youth ages 17-21 increasing our reach and brand recognition amongst engineering students promoting the value of licensure.	CP8, CP9, SP1.1, SP2.1
Canadian Indigenous Advisory Council to AISES (CIAC)	**Nature of commitment:** We are a voting member **Cost:** $0	**Increase organizational success:** Ongoing exchange of knowledge and understanding of needs of Indigenous engineers and students. **Drive broader social and systems change:** Building community and supporting success for Indigenous engineers.	CP9
Canadian Institute of Planners / Canadian Society of Landscape Architects / Royal Architecture Institute of Canada	**Nature of commitment:** Letter of understanding **Cost:** $0	**Increase organizational success:** Ongoing exchange of knowledge, thought and access to network of peers.	CP5, CP8, CP9, SP2.1
Canadian Network of Agencies for Regulation	**Nature of commitment:** Membership **Cost:** $1,200 (membership)	**Increase organizational success:** Ongoing exchange of knowledge and access to network of peers has informed and guided regulatory work, in particular for regulatory research to provide information to the Regulators of best and new practices.	CP2, CP6
Canadian Society of Association Executives	**Nature of commitment**: Membership **Cost:** $1,750 (membership)	**Increase organizational success:** Ongoing exchange of knowledge and access to network of peers has informed and guided internal operations and governance.	Board responsibilities, Operations

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
Council of Engineering and Scientific Society Executives	**Nature of commitment:** Membership **Cost:** $180 US (membership)	**Increase organizational success:** Ongoing exchange of knowledge and access to network of peers has informed and guided operations and governance.	Board responsibilities, Operations
Council on Licensure Enforcement and Regulation	**Nature of commitment:** Membership **Cost:** $525 US (membership)	**Increase organizational success:** Ongoing exchange of knowledge and access to network of peers has informed and guided regulatory work, in particular, for regulatory research to provide information to the Regulators of best and new practices.	CP2, CP6
DiscoverE	**Nature of commitment:** Letter of understanding **Cost:** $0	**Increase organizational success:** Through access to Future City resources offered by DiscoverE, we engage over 3,500 teachers and elementary students annually with minimal effort and resources. The design of the program is based in best practices around intersectionality and youth engagement. **Drive broader social and systems change:** Engineers Canada nominates Canadian engineers to be featured on Persist Series webinars, promoting women in engineering and their success stories. Promotional partner of Global Marathon in Canada as free professional development for women engineers.	CP8, CP9, SP2.1
Electricity Human Resources Council	**Nature of commitment:** Participation in steering and advisory committees **Cost:** $0	**Increase organizational success:** Ongoing exchange of knowledge, thought and access to network of peers has informed and guided our best practices in diversity and inclusion (e.g., staying on top of current information and benchmarking practices).	CP9, SP2.1

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
Engineers of Tomorrow	**Nature of commitment:** Letter of understanding and sponsorship **Cost:** $20,000	**Increase organizational success:** This organization specializes in recruiting, training, and placing engineers in classrooms for the purpose of engineering career awareness. In addition to managing the execution of the Future City Experience Program, Engineers of Tomorrow provides year-round support for engineer placements in classrooms through their Engineers in Residence Program. **Maximize resources:** Through this organization we recruit, train, place and provide ongoing support to over 200 engineer volunteers and 100 classrooms annually across Canada through the Future City Program. We are supporting a pilot expanding this support service to Regulators with EngGeoMB.	CP8
Engendering Success in STEM (ESS)	**Nature of commitment:** Sponsorship **Cost:** $7,500/year over 5 years; $1,800/year (participation in F2F meetings)	**Increase organizational success:** Ongoing exchange of research and data. **Drive broader social and systems change:** Supporting research on diversity and inclusion, implicit bias, and gender stereotypes in engineering.	CP8, CP9, SP2.1

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
Engineering Deans Canada (EDC)	**Nature of commitment:** Informal **Cost:** ~$10,000 (participation in F2F meetings) and in-kind hours **Revenue**: $40,000	**Increase organizational success:** Direct access to deans of engineering faculties across the country. Supports knowledge exchange and communication vehicle to reach a large number of accreditation stakeholders. In-person communication vehicle by having a physical presence at biannual EDC meetings and by having EDC presence at CEAB meetings, sub-committee meetings, and participation in working groups and taskforces. **Drive broader social and systems change:** A key player in consultations on change to CEAB accreditation criteria, policies, and procedures. A source of feedback on accreditation improvements. Collaboration on diversity, equity, and inclusion work including 30 by 30 and Indigenous access to engineering. **Provide services to EDC:** Including secretariat services, banking and account management, and provision of customized resource reports as part of the Enrolment and Degrees Awarded annual survey. Secretariat services are contracted out, so the $40,000 revenue is a flow-through.	SP 1.1, SP2.1, CP1, CP8, CP9
EngiQueers	**Nature of commitment:** Informal **Cost:** $12,500 (sponsorship for inaugural conference)	**Increase organizational success**: Access to and direct engagement of youth 17-21 increasing our reach and brand recognition particularly during National Engineering Month. **Drive broader social and systems change:** Supporting inclusion of 2SLGBTQ+ students and professionals in engineering.	CP8, CP9, SP2.1

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
Girl Guides	**Nature of commitment:** Letter of understanding **Cost:** $5,000 annually via Girl Guide Crest Program	**Maximize resources**: Able to provide young girls with engineering activities and opportunities to directly engage with an engineer without having to organize, manage or financially support the activities. **Increase organizational success:** Ongoing exchange of knowledge, thought and access to network of young girls and educational professionals outside of the school system across Canada. Alignment of Girl Guides Canada's STEM programing with engineering. **Drive broader social and systems change**: Opportunities to experiment with different solutions to a problem (increase women in engineering).	CP8, CP9, SP2.1
Geoscientists Canada	**Nature of commitment:** Informal **Cost:** $0	**Increase organizational success:** many of our regulators also regulate Geoscientists and ask that where appropriate that we include Geoscientists.	CP8, CP9, SP2.1
Indspire	**Nature of commitment:** Sponsorship of bursary award **Cost:** $5,000/ 3-year commitment	**Drive broader social and systems change**: Promoting engineering as a career path to Indigenous youth.	CP9
International Engineering Alliance	**Nature of commitment:** Membership **Cost:** $7,500 (membership) ~$66,000 (participation in F2F meetings)	**Increase organizational success:** Ongoing exchange of knowledge, and access to network of peers has informed and guided regulatory work, in particular for international mobility, to provide means to streamline Regulators' licensure processes. **Drive broader social and systems change**: To be party to and have influence in international agreements at the academic and professional level.	CP1, CP2, CP6, CP7

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
National Council of Examiners for Engineering and Surveying (NCEES)	**Nature of commitment:** Informal **Cost:** ~$8,000 (participation in F2F meeting)	**Increase organizational success:** Ongoing exchange of knowledge and access to like organization has informed and guided regulatory affairs and governance.	CP2, CP3, CP6, CP7
National Society of Professional Engineers (NSPE)	**Nature of commitment:** Informal **Cost:** ~$8,000 (participation in F2F meeting)	**Increase organizational success:** Ongoing exchange of knowledge and access to like organization has informed and guided regulatory affairs.	CP2, CP3, CP6, CP7
Natural Sciences and Engineering Research Council of Canada (NSERC)	**Nature of commitment:** Formal **Cost:** $0 **Revenue:** $50,000 (over 3 years)	**Maximize resources:** Secured a grant to support our Future City program for three years (2021-2023).	CP5, CP8, CP9, SP2.1
Ontario Network of Women in Engineering (ONWiE)	**Nature of commitment:** Informal **Cost:** $0	**Increase organizational success:** Ongoing exchange of research and data on women in engineering. **Drive broader social and systems change:** Supporting Go ENG Girl promoting engineering women young girls.	CP8, CP9, SP2.1
Ontario Society of Professional Engineers (OSPE)	**Nature of commitment:** Formally 30 by 30 Champion and informally for National Engineering Month **Cost:** $0	**Increase organizational success**: Sharing of resources on diversity and inclusion. Strengthens consultation network by providing perspective on advocacy issues within Canada's largest jurisdiction. **Drive broader social and systems change**: Active member of 30 by 30 Champions network to increase women in engineering.	CP5, CP8, CP9, SP2.1
Ontario Tech University (OUT)	**Nature of Commitment:** Formal **Cost: $**0	**Increase organizational success:** Partnered with OTU to provide a national Future City Experience Showcase. OTU has taken the lead in the organization and implementation of the showcase for the Future City Experience Program.	CP8

Organization	Partnership commitment	Purpose and outcomes of partnership	Strategic alignment
Polytechnique Montreal	**Nature of commitment:** Partnership agreement for massive open online course (MOOC) – Sustainability in Practice, **Cost:** $0	**Increase organizational success:** Broadening awareness and uptake of QB National Practice Guideline on Sustainable Development and Environmental Stewardship by engineers in all jurisdictions and increasing the profile of Engineers Canada. **Drive broader social and systems change:** Provides widely accessible CPD in Canada and internationally to foster change and excellence in engineering practice to consider sustainable development, climate change and environmental stewardship.	CP8, SP2.1
Society of Women Engineers (SWE)	**Nature of commitment:** Informal **Cost:** $0	**Increase organizational success**: Sharing of research and information on women in engineering. **Drive broader social and systems change**: Creating and supporting a network and community for women engineers.	CP9, SP2.1
Women in Engineering (WES) Summit	**Nature of commitment:** 30 by 30 Champion **Cost**: $0	**Increase organizational success**: Sharing of knowledge and information on women in engineering. **Drive broader social and systems change**: Creating and supporting a network and community for women engineers.	CP9, SP 2.1
World Federation of Engineering Organizations	**Nature of commitment:** Membership **Cost:** $8,000	**Maximize resources:** Maintain contact and foster relationships with national member engineering organizations in more than 90 countries. Information on strategies, practices and policies for engineering education in these countries, and the promotion of engineering to women and youth. **Drive broader social and systems change:** Work together with secretariat and member countries to expand and enhance the profile of engineers and engineering at the international level and with Canadian federal government.	CP1, CP7, CP8, CP9, SP2.1

Legend

Subcategory (Area)	Description
Partnership commitment	Includes the nature of relationship (formal, informal) and overhead cost associated with maintaining this relationship.
Purpose of relationship and outcomes to date	**The purpose of our strategic partnerships can be summarized as follows:** 1. **Maximize resources (boost organizational efficiency):** as an organization through this partnership we can accomplish our work more quickly and with fewer resources. "How this partnership helps us to maximize the desirable results, using the least amount of money and time" (Examples: cost savings, shared resources) 2. **Increase organizational success (effectiveness)**: how this partnership has contributed to the success and advancement of our stated objectives. (Examples: collective influence (joint programs, marketing), shared knowledge and thought exchange, awareness and recognition). 3. **To drive broader social and systems change**: leveraging our own efforts to achieve broader systems change in conjunction with other players. **Outcomes to date** refers to specific examples of how we have/are realizing the purpose of the partnership.
Strategic alignment	Refers to alignment of the partnership as it relates to Engineers Canada's *2022-2024 Strategic Plan* and objectives.

BRIEFING NOTE: For information

50-30 Challenge	3.5
Purpose:	To provide an update on Engineers Canada's participation in the federal government's 50-30 Challenge
Link to the Strategic Plan / Purposes:	2022-2024 strategic priority 2.1 (SP2.1): Accelerate 30 by 30 Core purpose 9: Promote diversity and inclusion in the profession that reflects Canadian society
Link to Corporate Risk Profile	Insufficient representation of marginalized groups
Prepared by:	Jeanette Southwood, Vice President, Corporate Affairs and Strategic Partnerships Kim Bouffard, Manager, Belonging and Engagement
Presented by:	Gerard McDonald, Chief Executive Officer

Background

- Engineers Canada's Board committed to the 50-30 Challenge in May 2021.
- In October 2020, the Minister of Innovation, Science and Industry launched the federal government's "50-30 Challenge". The objective of the challenge is to advance diversity and inclusion with the aim of improving representation of women and underrepresented groups on corporate boards and in senior management, over time.
- The 50-30 Challenge asks participating organizations to voluntarily take action and make two commitments, towards which they will report regularly on progress:
  1. **Gender** parity ("50 per cent women and/or non-binary people") on boards and in senior management; and
  2. Significant representation ("30 per cent") on boards and in senior management of other **underrepresented groups**, including racialized Canadians, Indigenous people, people with disabilities, and members of 2SLGBTQI+ communities.
- Since the October 2020 launch, the federal government has committed $33 million over three years for the initiative. This funding will assist diversity-serving organizations to support private and public sector organizations – including small and medium-sized businesses, not-for-profits, and academic institutions – with the development of tools to help them achieve the program's goals. These tools could include assistance with developing diversity strategies, the creation of mentorship and training opportunities and an online toolkit and resources that would be available to businesses and organizations across the country.
- Currently, there are 2,002 participating organizations in total.

Status update

- Engineers Canada is working to raise awareness of equity, diversity, and inclusion (EDI) amongst staff, the Board, and Regulators through training and sharing of resources. As part of our work on the 2022-2024 Strategic Plan's Strategic priority 2.1: Accelerate 30 by 30, we launched an EDI training course for engineers and geoscientists in spring 2022, available to all registrants through Engineers and Geoscientists BC's learning management system.
- We also organized three virtual sessions on May 3, 10, and 17, 2023, to support employers as part of our 30 by 30 conference lead up and organized an in-person Engineering Employer Leadership Summit on May 24. The summit was a full-day event on making change, including culture change, through

employer leadership. It included discussions on allyship and championing EDI, particularly within engineering firms and companies.

- The Canadian Engineering Qualifications Board Gender equity in the workplace guideline included the 50-30 Challenge as a resource for employers.
- Engineers Canada promoted the 50-30 Challenge to the 30 by 30 Network in the monthly 30 by 30 newsletter.
- The following tables illustrate demographics for the Board, collected through the 2022 and 2023 Board self-assessment surveys, and the senior leadership team, collected through a self-assessment survey.

Gender

	Board Directors		Senior Leadership Team	
	2022	2023	2022	2023
% Women and gender non-conforming	39%	-*	63%	50%
% Women (including women with trans experience)	-*	26%	-*	50%
% Men (including men with trans experience)	30%	53%	25%	50%
% Prefer not to say	4%	5%	13%	0%
% Gender-non-conforming/non-binary/gender fluid	-*	5%	0%	0%
% Another category of gender	-*	11%	-*	-*
Number that **did not answer** the question	6	4	0	0

** Indicates that this question was not asked in the survey*

Underrepresented groups

	Board Directors		Senior Leadership Team	
	2022	2023	2022	2023
% Underrepresented groups (i.e. racialized Canadians, Indigenous people, people with disabilities, and members of 2SLGBTQI+ communities, black, person of colour)	17%	7%	25%	25%
% Do not identify as a member of an underrepresented group	61%	73%	75%	75%
I prefer not to say	-*	20%	0%	0%
Number that **did not answer** the question	5	4	0	0

** Indicates that this question was not asked in the survey*

Results Summary

As mentioned in the Background section, the 50-30 Challenge asks participating organizations to report regularly on progress towards:

- gender parity (“50 per cent women and/or non-binary people”) on boards and in senior management; and
- significant representation (“30 per cent”) of other underrepresented groups, including racialized Canadians, Indigenous people, people with disabilities, and members of 2SLGBTQI+ communities on boards and in senior management. The following is a summary of 2022 and 2023 results.

	Board Directors		Senior Leadership Team	
	2022	2023	2022	2023
Gender parity (% Women and/or non-binary people)	39%	31%	63%	50%
Significant representation (% Underrepresented groups; i.e. racialized Canadians, Indigenous people, people with disabilities, and members of 2SLGBTQI+ communities, black, person of colour)	17%	7%	25%	25%
Number that **did not answer** the question	6* 5**	4	0	0

** Gender parity question*

*** Significant representation question*

Next Steps

- HR Director to develop an internal EDI training plan for staff and volunteers and explore how we measure and benchmark our work to existing EDI workplace standards
- Manager, Belonging and Engagement, to develop or source EDI training for the Board.

Appendix

- None.

BRIEFING NOTE: For decision

National Position Statements	3.6
Purpose:	To approve new and updated National Position Statements
Link to the Strategic Plan/Purposes:	Core purpose 5: Advocating to the federal government
Link to the Corporate Risk Profile:	Diminished national collaboration (Board risk) Reputation (operational risk) Sustainability of engineering regulation (operational risk)
Motion(s) to consider:	*a) THAT the following new National Position Statements be approved:* *i. Engineering a Sustainable Future: Role of Engineers in Helping Canada Achieve Net-Zero Emissions by 2050* *ii. Professional Practice in Biomedical Engineering* *b) THAT the following updated National Position Statements be approved:* *i. Federal Regulations of Small Fishing Vessel Design*
Vote required to pass:	Simple majority
Transparency:	Open session
Prepared by:	Joey Taylor, Manager, Public Affairs
Presented by:	Gerard McDonald, Chief Executive Officer

Problem/issue definition

- National Position Statements (NPSs) are positions on key issues relating to the public interest. These are consensus positions of the provincial and territorial Engineering Regulators. These statements:
  - Represent the collective position of the engineering profession
  - Influence public policy
  - Facilitate discussion with government
  - Provide information for our Members and those of the engineering profession
- Engineers Canada's Public Affairs Advisory Committee (PAAC) is tasked with creating the NPSs. This committee is comprised of volunteers with multi-disciplinary backgrounds and expertise.
- Each year, PAAC develops NPSs on new and existing issues facing the engineering profession. In addition, PAAC works to update the current NPSs to ensure they remain up-to-date and relevant. This helps ensure that parliamentarians and the federal government consider the expertise of the engineering profession in policy-making.
- The current process for deciding which topics PAAC will be developing in the upcoming year starts with a discussion of the potential topics during PAAC's May meeting. This process includes reviewing all existing NPSs and deciding which ones require updating as part of the annual update cycle. The topics identified by PAAC are circulated for approval by the Engineers Canada Board and the CEO Group. Once approved, PAAC develops and/or updates the NPSs and presents them to the Engineers Canada Board and the Regulators for approval. The process for the identification and development of public policies supported by the Regulators is available in Board policy 9.3, *National Position Statements.*
- The NPSs for review at this meeting are linked to core purpose 5: Advocating to the Federal Government of the 2022-2024 Strategic Plan, and include:
  - New position statements on:
    - The Role of Engineers in Helping Canada Achieve Net-Zero Emissions by 2050
    - Professional Practice in Biomedical Engineering

- Updated existing statements on:
  - Federal Regulations of Small Fishing Vessel Design

Proposed action/recommendation

- That the Board approve the attached NPSs.
- Once approved, the NPSs will be made public on Engineers Canada's website and will be relied upon when Engineers Canada staff and volunteers consult with the federal government on these issues.

Other options considered

- N/A

Risks

- Should the NPSs not be approved, the advocacy strategy would be impacted until a unified approach is agreed upon.

Financial implications

- N/A

Benefits

- To the Regulators:
  - A national position on key issues is beneficial as these issues affect the Regulators and the regulation of the engineering profession. Regulators strongly benefit from unified national positions.
  - Engineers Canada will have a unified position on topics in which the federal government is heavily engaged; therefore, it will potentially increase our profile with parliamentarians and senior federal officials.
- To the engineering profession:
  - These national positions provide clarity of the role of the engineering profession in helping tackle these current issues.
- To others (public, government, higher education institutions, individual engineers, etc.):
  - These national positions will provide the federal government with awareness on issues that Engineers Canada is currently working on that are linked to the federal government's mandate.

Consultation

- Our multi-disciplinary PAAC, Regulators (via the CEOs), and the Engineers Canada Board Directors were asked, by email, to review and provide comments and updates to the presented NPSs; 4 of the 12 Regulators and 0 Directors responded with approvals and/or comments via e-mail.
- There were no objections or concerns regarding the engineering profession's position as laid out in the NPSs being presented.
- As per the Board's directive, the NPS on 'Federal Regulations of Small Fishing Vessel Design' has been modified to incorporate environmental considerations.

Next steps (if motion approved)

- The NPSs will be made public on Engineers Canada's website and will be relied upon when consulting with the federal government on these issues.

Appendix

- **Appendix 1:** NPSs for approval – track change versions highlighting areas of adjustment resulting from staff updates and consultation feedback.

Engineering a Sustainable Future: Role of Engineers in Helping Canada Achieve Net-Zero Emissions by 2050

The engineering profession's position

- Engineers are essential in providing the technical expertise and solutions necessary for Canada to achieve its net-zero emissions targets by 2050. They are also committed to working with the federal government and other stakeholders to help meet net-zero emission targets, by providing the guidance and support necessary to plan, design, develop, and implement sustainable solutions and systems.
- Engineers Canada is committed to working with the federal government, industry partners, and other engineering organizations to address the challenges and opportunities related to achieving net-zero.
- The engineering profession recognizes the urgency of addressing climate change and the critical role that engineers and engineering solutions play in transitioning to a low-carbon economy while maintain a prosperous and resilient Canadian society.

The challenge(s)

The Government of Canada has committed to transition the Canadian economy and achieve net-zero greenhouse gas (GHG) emissions by 2050 through the federal *Canadian Net-Zero Emissions Accountability Act*.[1] This ambitious goal has the potential to effectively reduce Canada's impact on global warming and solidify Canada's position as a global leader in low-emission technologies and practices across all economic sectors. To support the path to net zero, the federal government is developing Emissions Reduction Plans in five-year increments from 2030-2045. The first of these plans—Canada's 2030 Emissions Reduction Plan[2] (released in March 2022)—provides a roadmap for how the country will reduce emissions by 40-45 per cent (from 2005 levels), by 2030. The federal plan uses a multi-faceted approach that commits all sectors of the Canadian economy to take climate change seriously and to do their part to reduce the nation's carbon emissions dramatically in less than 30 years.

While this monumental task presents a challenge for decision makers, the engineering profession has a crucial role in designing, developing, and implementing sustainable solutions and systems across economic sectors that will help the federal government achieve its net-zero targets while maintaining a productive Canadian economy. This involves designing energy-efficient buildings and infrastructure, improving the delivery systems of clean and renewable energy technologies (such as wind, solar, geothermal, hydro, and nuclear), and implementing systems that reduce emissions. Engineers are also

[1] Government of Canada (2023). "Net-Zero Emissions by 2050". Retrieved from: https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html

[2] Government of Canada (2023). "2030 Emissions Reduction Plan: Clean Air, Strong Economy". Retrieved from: 2030 Emissions Reduction Plan: Clean Air, Strong Economy - Canada.ca

involved in the research and development of new technologies that will help reduce GHG emissions by sequestering carbon from the atmosphere and mitigate the effects of climate change, all while carefully assessing and managing associated risks.

The societal acceptance of technology is a crucial factor in the transition to net zero. Although numerous solutions to mitigate climate change already exist, public perception and required lifestyle changes may hinder their widespread implementation[3]. Engineers can play a role in this process by promoting social engagement through education and communication, fostering support among stakeholders and the public, and facilitating the successful adoption of these technologies.

Engineers are therefore essential in providing the technical expertise and solutions necessary to achieve the federal government's net-zero targets, as well as in identifying and addressing the barriers to implementation and in the design and operation of the infrastructure needed to support the transition.

How Engineers Canada has contributed

Engineers Canada actively engages with the federal government to ensure that professional engineers are involved in initiatives that impact their work. We have established open and strong working relationships with both parliamentarians and senior federal officials within the federal government.

In collaboration with the 12 provincial and territorial engineering regulators, Engineers Canada has offered unbiased expertise to enhance the safety and resiliency of communities across Canada, while contributing to efforts to mitigate climate change and its impacts. Initiatives include:

- Issuing National Position Statements that reflect the engineering profession's stance on critical issues related to public interest, including climate change mitigation and adaptation.
- Supporting federal initiatives by providing evidence-based recommendations.
- Creating national guidelines and papers that serve the needs of regulators, engineers, and applicants for licensure regarding the environment and sustainability.

Provincial and territorial engineering regulators are key to the federal government's net-zero goals, upholding high standards of competency and ethics among engineers. They set and enforce guidelines for sustainable engineering practices, including the design of energy-efficient buildings and infrastructure, and the development of renewable energy systems. Regulators also offer education and training opportunities to equip engineers with the necessary knowledge and skills for sustainable technology and system implementation.

Recommendations to the federal government

The engineering profession's collaboration with the federal government is essential to realizing Canada's net-zero emissions plan while maintaining a prosperous and resilient Canadian society. These emission targets can be met through a combination of measures, that can be supported by the engineers. They include:

[3] University of Colorado Boulder (2022). "As the Climate Changes, So Must the Role of Engineers". Retrieved from: https://www.colorado.edu/herbst/2022/06/09/climate-changes-so-must-role-engineers#:~:text=Scientists%20and%20engineers%20are%20innovating,the%20rate%20of%20climate%20change.

- Evaluating and proposing solutions to address Canada's future energy requirements while balancing cost-effectiveness, reliability, and GHG reduction. This entails dramatically increasing renewable energy sources such as wind, solar, geothermal, hydro, and nuclear, thereby decreasing dependence on fossil fuels.
- Increasing the use of electricity and hydrogen in the transmission and end use of energy as well as associated energy storage technologies such as battery technology.
- Improving energy efficiency in domestic, commercial, and industrial sectors, including buildings, transportation, and industry to reduce energy consumption and emissions.
- Investing in the development and deployment of new technologies, such as carbon capture and storage, to reduce emissions from industrial processes and power generation.

The federal government should prioritize infrastructure investments for a net-zero future, focusing on leveraging our current infrastructure and upgrading the transmission grid to overcome its limitations in capacity and interconnectivity. This is essential during emergency scenarios, such as prolonged power outages following natural disasters like Hurricane Fiona. The federal government should also prioritize infrastructure investments to support resource extraction and transportation for materials such as hydrogen, lithium, uranium, and other metals and minerals. Streamlining the approval process will increase market efficiency and access to these resources.

Engineers possess the skills and knowledge to respond and advise the federal government on current and future challenges and opportunities. The application of engineering principles and expertise spans across every federal department, from Environment and Climate Change Canada to the Department of Finance, and includes providing insight to strengthen Canada’s innovative output, protecting structural integrity of physical infrastructure, protecting the natural environment, and finding solutions, across economic sectors, for a net-zero carbon economy. Moreover, to ensure proper consultation and collaboration in accordance with provincial and territorial engineering acts, the federal government should engage professional engineers when developing or amending legislation and regulations related to engineering work related to these issues.

How Engineers Canada will contribute

Engineers Canada will:

- Provide guidance and expertise on sustainable engineering practices and technologies to help the government develop and implement policies and programs that reduce GHG emissions.
- Continue to promote the adoption of sustainable engineering practices and technologies through the development and dissemination of national guidelines.
- Continue to provide input and feedback from engineers on federal initiatives, legislation, policies, and regulations to support the transition to a low-carbon economy.
- Though its national accreditation process for undergraduate engineering education, ensure awareness of society’s needs regarding climate change mitigation, and associated engineering expertise is a part of the training of Canadian engineers at Canadian post-secondary institutions.

Other notable references and reports:

- Canadian Climate Institute (2023). The Big Switch. Powering Canada's Net Zero Future.
- Clean Energy Canada (2023). A Renewables Powerhouse.
- International Energy Agency (2023). Energy Technology Perspectives 2023
- Electricity Canada (2023). Net Zero by 2050.
- SNC Lavalin (2022). Engineering Net Zero. Is Canada on Track to Meet its 2023 Targets?

Professional Practice in Biomedical Engineering

The engineering profession's position

- Biomedical engineering is a critical and rapidly expanding discipline that holds significant potential to greatly enhance healthcare and the quality of life of Canadians.
- The regulation of biomedical engineers and biomedical engineering recognizes the importance of ensuring the safety and efficacy of medical devices and treatments developed through this field, as well as the need to protect the public from any potential harm.
- Incorporating biomedical engineers' accountability into federal, provincial, or territorial legislation and regulations related to biomedicine weaves the engineering regulatory process into the fabric of government and thereby keeps Canadians safe and the country prosperous.
- To safeguard the public and prevent unlicensed individuals in biomedical engineering from performing duties that require a licensed engineer, it is crucial for all stakeholders—the public, engineers, governments, regulators and decision-makers—to comprehend the regulated scope of biomedical engineering and the benefits of its regulation by provincial and territorial engineering licensing bodies.

The challenge(s)

Biomedical engineering is the application of engineering principles and practices to medicine and biology for healthcare purposes.[1] Biomedical engineers use their knowledge of engineering and biological sciences to plan, design, develop, and evaluate medical devices, systems, materials, and equipment, as well as to create new technologies and therapies.[2] The vast field can be broken down into several subfields, that include (i) biomedical devices and instrumentation, (ii) medical imaging, (iii) biomechanics and rehabilitation engineering, (iv) biomaterials and tissue engineering, and (v) biomedical signal and image processing. Biomedical engineers therefore play an important role in the development of new technologies and therapies that can improve the diagnosis, treatment, and understanding of human health and disease.

Medical devices developed through the application of engineering are used widely. The associated medical devices industry is heavily regulated in Canada. Like other regulated industries, software is used to drive or control biomedical devices such as radiation (imaging) devices, surgical robots, and non-invasive instruments. In some cases, medical devices interact directly with humans and must be safely

[1] Enderle, J. & Bronzino, J. (2012). *Introduction to Biomedical Engineering*. Academic Press. pp. 16–. ISBN 978-0-12-374979-6.
[2] *IBID*

controlled. The overall system including the associated software must be designed not only to function in an appropriate manner, but to prevent malfunction and inappropriate or unsafe operation, even in the presence of failures. Defective hardware and software could lead to direct harm to the patient in the use of the medical devices or to the incorrect processing of data, and consequently poor decisions or actions on the part of health care providers impacting future patient health. Erroneous processing on the part of such a system could result in a false negative (which incorrectly indicates that a disease condition or attribute is absent) or in a false positive (a result that incorrectly indicates that a particular condition or attribute is present). The need for safety in such systems is clear: failure or erroneous behaviour can result in injury to patients. Because of this risk, medical device design, production, operation, and maintenance are subject to industry specific regulation. Concerns about the development and use of medical devices also exist in other subfields of biomedical engineering.

Biomedical engineering is a rapidly evolving field, and there is an increasing need for licensed biomedical engineers who can apply their knowledge of engineering principles and practices to the planning, design, development, and evaluation of medical devices, equipment, materials, and therapies. As the population continues to age, there is increased demand for medical devices and associated treatments that can help older individuals maintain their independence and quality of life. Additionally, advancements in technology enable the development of new therapies and devices. Together this drives demand for licensed biomedical engineers who can help to plan, design, develop, and evaluate these new therapies and devices. The regulation of biomedical engineering is therefore crucial for ensuring the safety and efficacy of medical devices and associated therapies developed through this field and protecting the public from any potential harm.

How Engineers Canada has contributed

Engineers Canada actively participates in federal consultations regarding legislation and regulations that impact the work of engineers and address initiatives that require the expertise of an engineer.

Biomedical engineering programs at Canadian post-secondary institutions that apply for accreditation are subject to an accreditation process, developed and administered by Engineers Canada through the Canadian Engineering Accreditation Board (CEAB). The CEAB ensures these biomedical engineering programs are current and relevant to Canadian needs.

With licensure tools developed by Engineers Canada, the provincial and territorial engineering regulatory bodies can assess the qualifications of all applicants to determine whether they are eligible for licensure and to determine requirements that need to be satisfied to achieve professional engineer status.

In addition, the Canadian Engineering Qualifications Board (CEQB) has developed the *Biomedical Engineering Syllabus* to further define the requirements for biomedical engineering. The CEQB, in consultation with the provincial and territorial engineering regulators, has also prepared a national document that provides guidance to regulators regarding the scope and depth of the software engineering discipline, which is closely related to biomedical engineering in some cases. This *national*

paper on professional practice in software engineering provides an introductory rationale that addresses the nature of practice in software engineering, including the use of software in biomedical devices and their applications.

Provincial and territorial engineering regulators play a crucial role in ensuring the safe and ethical practice of biomedical engineering. They do this by setting standards and guidelines for the practice of engineering and by enforcing these standards through licensing and disciplinary processes. Most engineering regulatory bodies regulate engineering businesses to ensure that companies without a Permit to Practice are prohibited from practicing engineering, including biomedical engineering, and from using reserved titles. This helps to protect the public and ensure that new technologies and therapies are developed and used in a responsible and effective manner.

Recommendations to the federal government

The federal government should continue to recognize that the Canadian public are best served when the jurisdiction of the 12 provincial and territorial engineering regulators is recognized and respected. These regulators have been delegated the authority to regulate the engineering profession by their respective provincial and territorial governments. They maintain high professional and ethical standards, establish codes of conduct, and ensure timely, transparent, objective, impartial, and fair admissions and licensing practices. By overseeing and supporting the practice of professional engineering in their jurisdictions, they help ensure the protection of the Canadian public.

The licensing of biomedical engineers by one of the 12 provincial and territorial engineering regulators ensures that only qualified and competent individuals can practice in the field and provides a mechanism for disciplining those who engage in unethical or unsafe practices. This helps maintain the integrity of the profession and protects the public. Engineers are also responsible for upholding ethical and safety standards and ensuring that their products and services meet these standards, as well as for the safety, performance, and reliability of their designs.

To ensure proper consultation and collaboration in accordance with provincial and territorial engineering acts, the federal government should involve professional engineers when developing or amending legislation and regulations related to biomedical engineering or biomedical engineers.

How Engineers Canada will contribute

Engineers Canada will continue to contribute in the following ways:

- Ensure Canadian standards for the accreditation of biomedical engineering in Canadian universities are current and reflect Canadian needs.
- Support the work of provincial and territorial regulators to enforce the engineering acts as they pertain to the practice of biomedical engineering.

- Monitor the federal government's agenda, legislative initiatives, and proposed biomedical regulations to bring recommendations on emerging areas to the attention of the federal government.

Federal Regulations of Small Fishing Vessel Design

The engineering profession's position

- The federal government has an important role to play in improving the safety of those involved in the fishing industry and should therefore ~~open a consultation on fishing vessel stability analysis, to ensure that this process is more rigorous.~~undertake a review of the regulatory framework affecting the design, construction, and modification of small fishing vessels to ensure the framework results in safe and efficient vessels.

- Federal departments should recognize the authority of provincial and territorial engineering regulators, specifically within regulatory fishing vessel frameworks, to ensure public safety and that where engineering work is being performed in Canada, that work ~~is done~~must be performed by an engineer licensed in the province or territory where the work is being completed.

- Any new regulatory framework ~~must recognize the authority of provincial and territorial regulatory associations and must also recognize that work requiring~~requires unbiased and transparent naval architectural expertise ~~should be~~ conducted by ~~an~~or under the supervision of a professional engineer licensed to practice in Canada.

- The federal government should incorporate climate adaptation and mitigation strategies within fishing vessel regulatory frameworks to align with its Net-Zero Emissions by 2050 initiative. This will have the additional benefits of ensuring the ongoing economic viability of fishing businesses.

The challenge(s)

A small fishing vessel (SFV) is defined by Transport Canada as a vessel ~~measuring~~with an overall length of not more than 24.4 meters ~~in length~~ and ~~below, and that is less~~of not more than 150 gross tonnage. The current regulatory framework that governs the design of SFVs in Canada has evolved over time to ~~result in~~permit unsafe and non-environmentally conscious vessels and design practices. Currently, a design must: meet a simple length restriction imposed by the Department of Fisheries and Oceans Canada (DFO) aimed at reducing the catch capacity of the vessel; and ~~at the same time,~~ meet the minimum static stability requirements of Transport Canada's *Fishing Vessel Safety Regulations.*

As a result of the existing framework, some vessels have been designed to bypass the DFO's intention of limiting vessel catch capacity by significantly increasing their width and depth. By increasing vessel width, the static stability requirement is easily met since static stability is a function of vessel width. Consequently, vessels with extreme proportions have emerged, with length-to-beam (L/B) ratios of over 4.0 being reduced to 2.0 or lower over time. However, Transport Canada does not specify a maximum stability specification. Generally, wider vessels tend to have greater stability. However, it is possible for a vessel to be excessively stable, which may seem counterintuitive. For example, vessels with wide beams designed to increase catch capacity may have such extreme proportions that they become a safety

hazard due to excessive stability. An excessively stable vessel has motions that are so extreme that crew members must tie themselves to the vessel to avoid being thrown around. This has resulted in several motion reduction strategies being employed for which there is no regulatory framework.

The regulatory framework governing SFV has resulted in numerous instances of loss of lives, capsized vessels, and environmental damage due to fuel spills. The sinking of Ryan's Commander in 2004, designed by an unlicensed practitioner, is a notorious example of the contradiction between DFO and Transport Canada regulations, as outlined in the Transportation Safety Board of Canada (TSB) report.[1] The TSB's May 2022 report on the 2020 sinking of the Sarah Anne, which resulted in loss of life, noted that many small vessels lack stability studies. One of the contributing factors to the Sarah Anne's loss was the absence of a stability assessment.[2] The TSB's 2023 report on the sinking of the Chief William Saulis links federal inaction on imposing stricter stability standards for SFVs to the vessel's sinking[3]. The report highlights the need for mandatory stability assessments for modified vessels and notes that such assessments were not required during the 2017 inspection by Transport Canada inspectors. The vessel capsized in 2020, killing all six crew members. These incidents underscore the need for engineering oversight of fishing vessel stability modifications.

In addition to the adverse impact on vessel safety caused by the regulatory framework, the evolution of design towards low L/B ratios has resulted in excessive fuel consumption and a resulting increase in greenhouse gas emissions. A regulatory framework that would result in more conventional L/B ratios would result in safer vessels with fuel consumption as low as 33% of current levels.

In Canada, the regulation of engineering, including naval architecture, is regulated by provincial and territorial associations of professional engineers, as mandated by provincial and territorial laws and regulations. However, the federal government is exempt from those laws. In the case of SFVs, Transport Canada accepts the work of non-licensed individuals who perform engineering work but are not required to follow the requirements and standards established by provincial and territorial engineering regulators. Although Transport Canada is not responsible for governing who practices naval architecture in Canada, it is responsible for reviewing work submitted by vessel designers and producing the required stability analysis. However, the current regulations do not provide adequate measures to ensure safe vessels. Transport Canada is not accountable for ensuring the accuracy or safety of the analysis or the data used in the analysis, which places vessel operators, fishers, and crew members at risk.

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[1] *The contribution of the regulatory contradiction between DFO length restrictions and Transport Canada's stability requirements was highlighted by the Transportation Safety Board of Canada in its Marine Investigation Report M04N0086 "Capsizing and Loss of Life: Small Fishing Vessel Ryan's Commander – 5 Nautical Miles East of Cape Bonavista, Newfoundland and Labrador, 19 September 2004".*

[2] *Transportation Safety Board of Canada (2022). "Marine transportation safety investigation report M20A0160 – Sinking and subsequent loss of life, Fishing Vessel Sarah Anne, Placentia Bay, Newfoundland and Labrador – 25 May 2020"*

[3] *Transportation Safety Board of Canada (2023). "Marine transportation safety investigation report M20A0434 – Sinking with loss of life. Fishing vessel Chief William Saulis – 15 Dec 2020".*

Recommendations to the federal government

To improve the safety of those involved in this industry, the ~~federal government should review its~~ current ~~*Stability Assessment and Stability Standards*~~regulatory framework must be reviewed to ensure that ~~all new~~ vessels ~~(or those that have undergone a major modification or a change in activity that is likely to adversely affect its stability) of more than six meters in length,~~ require an assessment conducted ~~by~~ under the supervision of a licensed ~~practitioner, such as a professional~~ engineer. The federal government has an important role to play in improving the safety of those involved in the industry and should therefore open a consultation on fishing vessel ~~stability analysis, to ensure that this process is more rigorous~~design, including the design of vessel modifications and the design of motion mitigation technologies.

Engineers Canada and the engineering profession uphold that ~~SFV~~all design must be performed under the supervision of a professional engineer. Professional engineers who are involved in the design of ~~SFVs~~fishing vessels are mandated and held accountable by the terms of their license to ensure that the welfare of the public and the environment are paramount in their work. Unlicensed practitioners have no such accountability.

How Engineers Canada will contribute

Engineers Canada will:

- Advocate for a public consultation regarding the small fishing vessel ~~stability analysis~~regulatory framework, to ensure that the process is ~~more rigorous~~conducive to the design of safer vessels.
- Continue to work with federal departments such that they recognize the authority of provincial and territorial engineering regulators, specifically within regulatory fishing vessel frameworks, and to ensure that where engineering work is being performed in Canada, that work must be done by an engineer licensed in the province or territory where the work is being completed.
- Advocate for climate adaptation and mitigation strategies within fishing vessel regulatory frameworks to support the federal government's Net-Zero Emissions by 2050 initiative, the Department of Fisheries and Ocean's climate change target strategy, and Transport Canada's Sustainable Development Strategy.

BRIEFING NOTE: For decision

CEAB appointments	3.7
Purpose:	To approve two new appointments and four re-appointments to the CEAB for terms starting July 1, 2023
Link to the Strategic Plan / Purposes:	Core purpose 1: Accrediting undergraduate engineering programs
Link to the Corporate Risk Profile:	Decreased confidence in the governance functions (Board risk)
Motion(s) to consider:	*THAT the following CEAB appointments be approved for the period July 1, 2023 to June 30, 2026:* • *Pierre Bourque, member-at-large (second term)* • *Mrinal Mandal, representative for Alberta (second term)* • *Julius Pataky, representative for British Columbia (third term)* • *Tara Zrymiak, representative for Manitoba and Saskatchewan (third term)* • *Jason Foster, member-at-large (new member)* • *Michael Roach, member-at-large (new member)*
Vote required to pass:	Simple majority
Transparency:	Open session
Prepared by:	Mya Warken, Manager, Accreditation and CEAB Secretary
Presented by:	Darlene Spracklin-Reid, Director from Newfoundland and Labrador, Senior Director Appointee to the CEAB

Problem/issue definition

- Under the provisions contained within the Board's earlier *Canadian Engineering Accreditation Board* (CEAB) policy, Julius Pataky and Tara Zrymiak are eligible for a third 3-year term. Support for these re-appointments was confirmed by EGBC and by Engineers Geoscientists Manitoba and APEGS.
- Under the current Board policy 6.9, *Canadian Engineering Accreditation Board* (CEAB), Pierre Bourque and Mrinal Mandal are eligible for a second 3-year term. OIQ confirmed Pierre Bourque's good standing and APEGA confirmed support for Mrinal Mandal's re-appointment.
- Support for all re-appointments was confirmed by the CEAB's Nominating Committee.
- A national call for expressions of interest for two CEAB members-at-large was launched on January 20 and closed on March 1, 2023. The call was distributed through *Engineering Matters, Accreditation Matters,* Engineers Canada's weekly CEO Update, to members of Engineering Deans Canada (EDC), and to members of the CEAB who were encouraged to share the call within their networks. The call was also sent to individuals who responded to previous calls for members-at-large who met at least one of the skills and/or qualifications sought.
- The CEAB's Nominating Committee reviewed all nominations and determined that Michael Roach and Jason Foster best fit the desired profile for members-at-large. Michael Roach and Jason Foster have confirmed their willingness to serve, should they be appointed by the Engineers Canada Board, and PEO has confirmed their good standing.
- Working with Engineers Yukon and NAPEG, the CEAB Nominations Committee sought the appointment of a representative from Yukon, the Northwest Territories, or Nunavut, as suggested under Board policy 6.9, but was unable to secure a nomination. The position will remain vacant until a nominee can be identified.

Proposed action/recommendation

- That the Board approve the appointments, for the noted terms.

Other options considered

- None.

Risks

- Given that all nominees have received their Regulator's support and/or confirmation of their good standing, there is no risk with proceeding with the appointments.

Financial implications

- There are no financial implications associated with the appointments.

Benefits

- The CEAB will benefit from having a sustained membership to support its work.

Consultation

- Regulator support and/or confirmation of good standing was received for the nominations.

Next steps (if motion approved)

- The Chair of the CEAB Nominating Committee, Senior Director Appointee Darlene Spracklin-Reid, will advise the individuals of their appointments.

Appendix

- **Appendix 1:** New nominee profiles (summary of key facts)

New nominee profiles
CEAB nominations 2023

Key facts about Jason Foster, LLFM

- Lecturer Professor, University of Ottawa.
- He has served on four accreditation visiting teams, most recently in 2022.
- He is fluent in English.

Key facts about Michael Roach, P. Eng.

- Product/Research Engineer, 3M Canada Company (1989-2019).
- He has served on three accreditation visiting teams, most recently in 2023.
- He is fluent in English and French.

BRIEFING NOTE: For decision

CEQB appointments	3.8
Purpose:	To approve four CEQB appointments and reappointments for period July 1, 2023 to June 30, 2026
Link to the Strategic Plan / Purposes:	Core purpose 3: Providing services and tools that; enable the assessment of engineering qualifications, foster excellence in engineering practice and regulation, and facilitate mobility of practitioners within Canada
Link to the Corporate Risk Profile:	Decreased confidence in the governance functions (Board risk)
Motion(s) to consider:	*THAT the following CEQB appointments be approved for the period July 1, 2023 to June 30, 2026:* • Anil Gupta, representative for Alberta (second term) • Adam Wallace, representative for Northern region (new member) • Farzad Rayengani, representative for Ontario (new member) • Carol MacQuarrie, member-at-large (new member)
Vote required to pass:	Simple majority
Transparency:	Open session
Prepared by:	Ryan Melsom, Manager, Qualifications and CEQB Secretary
Presented by:	Sudhir Jha, Director from Northwest Territories, Senior Director Appointee to the CEQB

Problem/issue definition

- Under the current Board policy 6.10, *Canadian Engineering Qualifications Board (CEQB),* Anil Gupta is eligible for a 3-year term renewal. Support for this re-appointment was confirmed by the CEQB's Nominating Committee, and the member's home Regulator (APEGA) confirmed support for the nomination, in keeping with requirements of the nominations process outlined in Board policy 6.10.
- Under the current Board policy 6.10, *Canadian Engineering Qualifications Board (CEQB),* the nominations of Adam Wallace, Farzad Rayegani, and Carol MacQuarrie were supported by their respective home regulators (Engineers Yukon, PEO, and Engineers Nova Scotia), in keeping with requirements of the nominations processes outlined in Board policy 6.10.

Proposed action/recommendation

- That the Board approve the appointments, for the noted terms.

Other options considered

- None.

Risks

- Given that all nominees have received their Regulator's support, there is no risk with proceeding with the appointments.

Financial implications

- There are no financial implications associated with the appointments.

Benefits

- The CEQB will benefit from having a sustained membership to support its work.

Consultation

- Regulator support was received for the nominations.

Next steps (if motion approved)

- The Chair of the CEQB Nominating Committee, Senior Director Appointee Chris Zinck, will advise the individuals of their appointments.

Appendix

- **Appendix 1:** New nominee profiles (summary of key facts)

Summary of Nominees

Carol McQuarrie, M.Sc., P.Eng.

- Director of Professional Affairs & Registrar, Association of Professional Engineers and Geoscientists of New Brunswick (2015-2022)
- Progressive roles with New Brunswick Department of Transportation and Infrastructure, including most recent as Executive Director (1991-2015)
- Law Society of New Brunswick – Public Representative on Council (2022 – present)
- Corporation of the Seven Wardens – Warden of Camp IX (2004 – present)
- Past National Discipline and Enforcement Officials Group chair
- Past National Practice Officials Group member
- Past member of the CEQB Practice Committee
- B.Sc.Eng., Civil Engineering, UNB (1985)
- M.A.Sc., Civil Engineering, U of Waterloo (1988)
- Public Service Management Program, University of New Brunswick, (2004)

Adam Wallace, M.Eng., P.Eng.

- Geotechnical Engineer, Arctic Region, Tetra Tech's Arctic Engineering Group (2013-present)
- Direct experience with the technical and logistical challenges related to completing engineering projects in the north
- Project engineer/ technical lead role for geotechnical projects.
- Project management for geotechnical and multi-disciplinary projects.
- Local perspective on social issues that are unique to the north, particularly with respect to delivering engineering projects in small, remote, Indigenous communities
- Registered in British Columbia, Alberta, and Yukon
- Council Member, Engineers Yukon (2021 – Present)
- B.A.Sc., Geological Engineering, UBC, (2006)
- M.Eng., Geological Engineering, UBC, (2014)

Farzad Rayegani, FEC, P.Eng.

- Senior Dean, Humber College, Toronto, Canada (2017-2023)
- Associate Dean, Mechanical and Electrical Engineering & Technology, Sheridan College (2012-2017)
- Professor, Applied Research & Industry Project Coordinator, Sheridan College (2004-2012)
- Co-chair, National Council of Deans of Apprenticeship, Trades and Technology (NCDATT) (2021-present)
- Past chair, Colleges Ontario -Heads of Technology (2019-2022)
- Principal Investigator / Project Lead, Southern Ontario Network for Advanced Manufacturing Innovation (2016-Present)
- Member of Experience Requirements Committee, Professional Engineers of Ontario (2002-Present)
- 25 academic publications (six as first author)
- PhD, Mechanical Engineering Systems, University of Miskolc, Hungary (1999)
- M.Sc., Mechanical Engineering, University of Miskolc, Hungary (1993)

BRIEFING NOTE: For information

Corporate Risk Profile	4.1.
Purpose:	Inform the Board on Board and operational risks
Link to the Strategic Plan/Purposes:	Board responsibility: Ensure the CEO maintains and acts on a robust and effective risk management system which reflects the Board's risk tolerance level and directs Board approved mitigation strategies.
Link to Corporate Risk Profile:	Decreased in the governance functions (Board risk)
Prepared by:	Mélanie Ouellette, Manager, Strategic and Operational Planning
Presented by:	Arjan Arenja, Chair of the Finance, Audit and Risk Committee and Direction, Ontario

Background

- The Corporate Risk Profile is divided in two elements: the first section contains the overall process, while the second section includes the Risk registers (Board and operational).
- According to Board policy 4.1 Board responsibilities, the Board is responsible for ensuring that the CEO maintains and acts on a robust, effective risk management system which reflects the Board's risk tolerance level and directs Board-approved mitigation strategies.
- The Board has delegated the task of reviewing risks and monitoring the CEO's risk management process to its Finance, Audit and Risk (FAR) committee.
- Once a year, the Board receives the Corporate Risk Profile for its visibility.

Status update

- FAR performed its most recent review at its meeting on March 10, where it also decided to recommend that quarterly risk reviews be done on an annual basis given that:
  - The nature of Board risks makes them unlikely to vary from quarter to quarter. Of note, risk scores have no changed since April 2021).
  - Most Board risks are addressed by the 2022-2024 strategic priorities. It is unlikely that scores will change while the work is still underway.
  - Concerns have been expressed that the quarterly frequency of reviews is not conducive to a fresh and in-depth review of risks. It is desirable to do it less frequently to keep a fresh perspective.
  - At any point in time, FAR or the Board can raise and discuss new risks that arise.
  - The Corporate Risk Profile is available to Board members anytime on OnBoard.

Next steps

- The FAR Committee's 2023-2024 work plan will include an annual, rather than quarterly, review of the Corporate Risk Profile.
- The Governance Committee will be asked to update the FAR Committee's terms of reference to reflect that the FAR Committee will review Board risks on an annual basis.

Appendices

- **Appendix 1:** Provide supporting information and documentation, ideally in the form of links to documents that are stored online.

Corporate Risk Profile

This corporate risk profile establishes Engineers Canada's risk management approach for Board and operational risks.

1. BACKGROUND

Engineers Canada serves the Regulators and upholds the honour, integrity, and interests of Canadian engineering by supporting consistent high standards in regulation, encouraging the growth of the profession in Canada, and inspiring public confidence. Our work is focussed on ten core purposes, as established by Engineers Canada's Members, the Engineering Regulators:

1. Accrediting undergraduate engineering programs.
2. Facilitating and fostering working relationships between and among the Regulators.
3. Providing services and tools that enable the assessment of engineering qualifications, foster excellence in engineering practice and regulation, and facilitate mobility of practitioners within Canada.
4. Offering national programs.
5. Advocating to the federal government.
6. Actively monitoring, researching, and advising on changes and advances that impact the Canadian regulatory environment and the engineering profession.
7. Managing risks and opportunities associated with mobility of work and practitioners internationally.
8. Fostering recognition of the value and contribution of the profession to society and sparking interest in the next generation of professionals.
9. Promoting diversity and inclusivity in the profession that reflects Canadian society.
10. Protecting any word(s), mark, design, slogan, or logo, or any literary, or other work, as the case may be, pertaining to the engineering profession or to its objects.

We are not a regulatory body, but we support Regulators in fulfilling their mandates. Risk management is how we proactively and transparently demonstrate that we are anticipating opportunities and threats and are addressing or have plans to address their consequences.

2. INTEGRATED RISK MANAGEMENT PROCESS

The corporate risk profile comprises two sections:

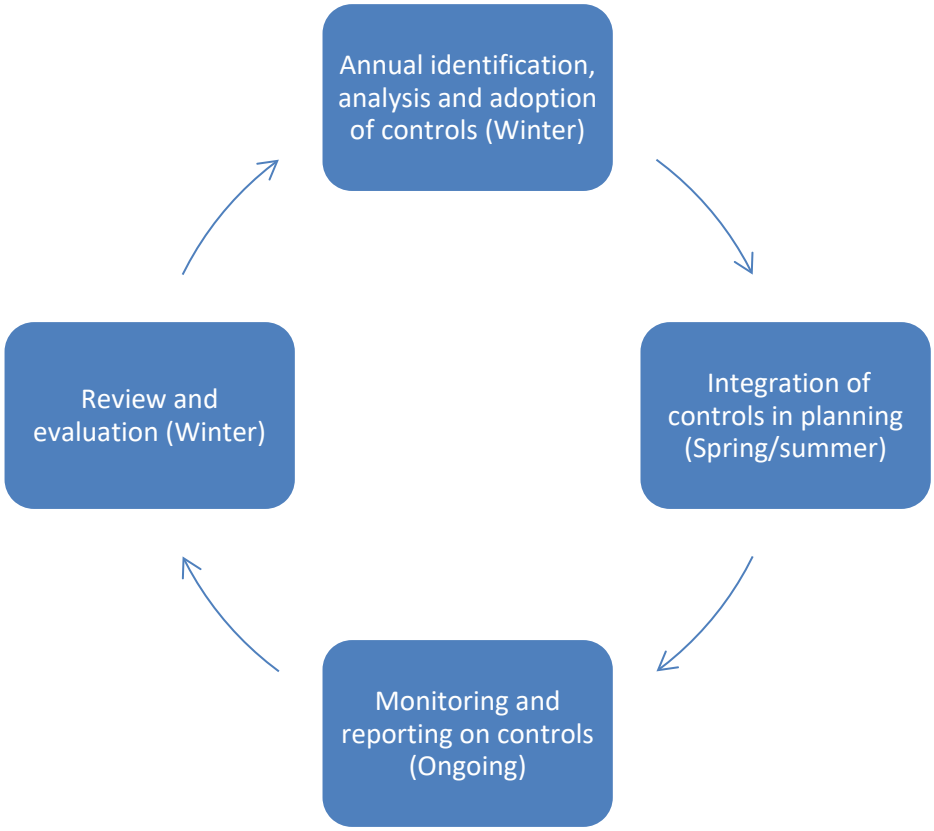
I. **Roles and responsibilities:** states expected roles and responsibilities for involved parties.
II. **Risk registers:** includes the templates describing all risks, their evaluation, and controls, and a heat map for the Board and for the operational risks separately.

There are two risk levels at Engineers Canada:

- *Board risks* are risks that are managed by the Engineers Canada Board; and,
- *Operational risks***:** are risks that are managed by the CEO, with oversight from the Engineers Canada Board.

While there is a distinction between Board and operational risks, we are all collectively responsible for proactively identifying, integrating, and mitigating risks. This figure summarizes our risk management process:

Figure 1.: Integrated Risk Management Process



3. ROLES AND RESPONSIBILITIES

The following individuals have specific responsibilities related to the maintenance of the corporate risk profile:

- **Engineers Canada Board** receives the corporate risk profile annually and adopts additional controls through the strategic plan. The Board also considers the impact of their decisions on existing risk(s) through the briefing notes that accompany all decisions presented to the Board.
- **Finance, Audit, and Risk Committee (FAR)** reviews the risk register quarterly, makes recommendations about adding risks any time a new one arises, and evaluates the corporate risk profile annually, prior to the Board's review in May.
- **Chief Executive Officer** reviews operational risks at least quarterly and incorporates Board direction regarding additional controls into operational planning and budgeting.
- **Authors of for-decision briefing notes** demonstrate to the Board how their recommendation(s) impact existing risk(s), when appropriate.

4. SCHEDULE

The following table highlights the schedule of the annual risk management process:

Month	Action
March	FAR reviews the corporate risk profile (comprised of both roles and responsibilities and the risk register).
May	Board receives the corporate risk profile.
June	FAR reviews the risk register. FAR can consider any new risk and add them to the register when appropriate.
August	FAR considers the risk register (with focus made on additional controls) along with the budget.
December	FAR reviews the risk register. FAR can consider any new risk and add them to the register when appropriate.

5. PROCESS TO ADD RISKS TO THE REGISTER

The following section highlights the process to add a new risk or element to an existing risk:

- **Board risks:** Potential risks or new events related to an existing risk can be presented to FAR for its consideration by any Board Director or staff. Prior to submitting it to FAR, a briefing note should be drafted to present a rationale as to why it should be added. If the nature of the new risk or event is urgent, the FAR Chair can choose to hold a special meeting to address the issue.
- **Operational risks:** At the discretion of the CEO, any new operational risk or new events related to an existing risk can be added at any time. The CEO must inform FAR of the change at their next regularly-scheduled review.

RISK REGISTERS

Board risks

The following heat map provides an overview of the risks managed by the Board. The matrix identifies risks that are part of the ongoing responsibilities of the Board as well as risks that were identified as part of the development of the current Strategic Plan.

No changes were made to current Board risk scores since April 2021. Four out of six Board risks have not yet met their target score, but are expected to meet them by the end of the current 2022-2024 Strategic Plan. Five out of six operational risks are on target, the exception being the client satisfaction risk, which will be dealt with under the Organizational excellence strategic priority.

LIKELIHOOD	IMPACT				
	1 **Insignificant** If occurs, will have little or no impact on delivering strategic priority(ies) or purpose(s)	**2** **Minor** If occurs, will have an impact on delivering 1 strategic priority or 1 purpose; Engineers Canada would recover with existing controls	**3** **Moderate** If occurs, will have an impact on delivering 2 + strategic priorities or 2+ purposes; Engineers Canada would recover with existing controls	**4** **Major** If occurs, will have an impact on delivering on 2+ strategic priorities or 2+ purposes; Engineers Canada could only recover with additional controls	**5** **Severe** If occurs, will require a restructuring of the purposes, governance, finances or operations of Engineers Canada in order to recover
5 **Extremely Likely** - Almost certain to occur					
4 **Likely** - More likely to occur than not	**Decreased confidence in the governance functions (BR)**		**Diminished scope and value of engineering regulation (BR)** **Insufficient representation of marginalized groups in engineering (BR)**		
3 **Moderate** - Fairly likely to occur				**Reduced long term financial viability (BR)**	**Decline in the value of accreditation (BR)**
2 **Unlikely -** Unlikely but not unforeseeable					**Diminished national collaboration (BR)**
1 **Low** -Unlikely to occur					

DECLINE IN THE VALUE OF ACCREDITATION (BOARD RISK)

Likelihood (1-5)	3 – Moderate (fairly likely to occur)	**Total**
Impact (1-5)	5 – Severe (if occurs, will require a restructuring of the purposes, governance, finances or operations of Engineers Canada in order to recover)	**15**
Target	Reduce the likelihood to 2 (unlikely) by the end of the Strategic Plan in 2024.	**10**

Trend *(When was the risk first identified, what is the trend)*	This risk was first put on the register in 2017. It has consistently remained in the high-risk category since it has been on the register.
Current situation *(How did the risk emerge)*	• Engineers Canada accredits undergraduate engineering programs on behalf of Regulators and therefore has set a national standard. Graduates of accredited programs do not have to pass an entry-to-practice exam to meet the academic requirement for licensure, as they are deemed to have completed the minimum path, content measured in accreditation units (AUs). • The 2015 introduction of graduate attribute and continual improvement (GA/CI) criteria, which are a requirement to remain part of the Washington Accord, has increased the workload of volunteers and of higher education institutions (HEIs) to both prepare for and maintain accreditation. • Some HEIs were under the impression that the introduction of the GA/CI criteria would lead to the elimination of input measures (currently measured in AUs) and continue to suggest that the input measures (AUs) should be eliminated. • As less than half of CEAB graduates seek licensure, some HEIs have questioned why Engineers Canada is requiring an onerous accreditation process, and if they should continue seeking accreditation. The Regulators have to ensure that all applicants for licensure meet the same academic requirement for licensure within their jurisdictions and establishing an evaluation methodology that is equivalent to the current accreditation system is challenging. • A 2022 Benchmarking exercise unveiled that the Canadian engineering accreditation model is similar to others. Differences found indicate that other models include some experimental learning requirement, and the Canadian model is the only one with a minimum path requirement and a time-length input requirement for degree length. It also has less industry involvement than the similar accreditation systems. • Programs are increasingly incorporating competencies, non-technical skills, and personalized program delivery path, which the current accreditation was not designed to accommodate are difficult for HEIs to offer under the current accreditation model.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• One or more currently accredited undergraduate engineering programs elect not to pursue re-accreditation because they no longer see value and find the accreditation model inflexible and costly. Creation of a parallel accreditation process by HEIs.
Potential consequences	• Regulators would have to use alternative methods to assess whether graduates are academically qualified to begin the licensure process. • Quality of engineering education could vary across jurisdictions. • Value of Engineers Canada for Regulators could diminish.

(What could happen if the potential event(s) take(s) place	• Canada's status as a Washington Accord signatory and signatory to other international mobility agreements could be at risk.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• Strategic priority 1.1: *Investigate and validate the purpose and scope of accreditation* • Implementation of the Tandem data management system for accreditation visits and decisions. The tool is designed to decrease workload and improve the efficiency of accreditation processes. • Temporary exemption to specific accreditation criteria to remove accreditation barriers to students going on international exchange. This time-limited (until June 2027) and situation-limited (for students participating in an international student exchange) will be considered by the CEAB at their February 2023 meeting.
Evidence *(How success of the existing controls is measured)*	• Accountability in Accreditation evaluation report (published annually starting October 2021) and follow up actions. • Trends in requests for accreditation submitted by new and currently accredited programs (Data is publicly available here). • Feedback from Regulators, HEIs, and CFES to consultations.
Residual risk *(Remaining risks after existing control measures)*	• A certain level of dissatisfaction is to be expected between any accrediting body and the organizations seeking accreditation. • Workload remains high, contributing to the dissatisfaction of HEIs who perceive the system as inflexible. • Accreditation changes take considerable time to implement (due to the length of the accreditation cycle and the availability of a volunteer workforce), and the strategic priority is a three-year project. Risks will persist at least until then. • Regulators' licensure processes continue to evolve, putting pressure on accreditation processes to remain aligned.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	This risk is above the risk tolerance of the Board.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	• The Board has been implementing Strategic priority 1.1: *Investigate and validate the purpose and scope of accreditation*, which is expected to be completed by end of 2024. • Industry and engineering students will be incorporated in the consultation process for SP 1.1. Investigate and validate the purpose and scope of accreditation. • The Board will be able to direct the CEO to suggest additional controls as part of the development of the 2025-2030 strategic plan.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Application of the consultation program to all CEAB changes, involving both Regulators and HEIs. • Increased collaboration of the CEAB's Policies and Procedures Committee (P&P) with the Deans' Liaison Committee, a subcommittee of Engineering Deans Canada. • Accountability in Accreditation annual assessment measures the transparency and effectiveness of the accreditation process, from the point of view of Regulators, HEIs, and others. The resulting report includes recommendations for the CEAB's consideration. This will result in a means of tracking the trends and identifying potential improvements. • Development of a web-based data management system (Tandem) to enable the submission and maintenance of accreditation documents, • Continual focus on strategies to manage the heavy workload assigned to volunteers by CEAB secretariat and volunteers.

	• Revised required materials for CEAB visits based on the minimum path and weakest link principles and audit good practices. This establishes clear and consistent expectations for HEIs while minimizing the information they need to provide and ensures visiting teams have the information they need to conduct a rigorous evaluation. (To be implemented for the 2023/2024 visit cycle). • The CEQB is also working on a feasibility study on alternative methods of academic assessment for non-CEAB applicants.

DECREASED CONFIDENCE IN THE GOVERNANCE FUNCTIONS (BOARD RISK)

Likelihood (1-5)	1 - Low (unlikely to occur)	**Total**
Impact (1-5)	4 – Major (if occurs, will have an impact on delivering on 2+ strategic priorities or 2+ purposes and Engineers Canada could only recover with additional controls)	**4**
Target	No change is expected for this risk as it is typical for any operating business.	**4**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• The Board governs the organization and makes governance decisions in the best interests of Engineers Canada, which serves the engineering Regulators. • The Board has obligations to supervise the management of Engineers Canada, to put in place and adhere to Board policies, to demonstrate transparency to Regulators, to adopt and monitor financial controls, and to ensure effectiveness of the Board. • The Board is also responsible for self-assessing its work and monitoring the work of its Direct Reports: the CEO, and the CEAB and CEQB chairs. • The Engineers Canada Board, as well as the members of the CEAB and CEQB, are volunteers.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• The Board does not effectively monitor financial resources. • Reliance on volunteers and governance structure does not allow quick response to events. • Regulators do not understand how to work within the governance framework. • Lack of Director representation and/or skills diversity. • One or more Board members do not comply with Board policies. • Reliance on CEAB and CEQB volunteers to deliver core products and services results in a lack of accountability and ability to deliver products in a timely fashion. • Lack of common understanding of what Regulators' want from Engineers Canada.
Potential consequences *(What could happen if potential event(s) take place)*	• Diminished or lost Regulator confidence in Engineers Canada (including CEAB and CEQB) • Regulator dissatisfaction or Regulator(s) leaving Engineers Canada. • Known or unknown mismanagement of financial resources or fraud by the CEO. • Reputation loss.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	None are required at this time.
Evidence *(How success of the existing controls is measured)*	• Results of annual self-evaluation. • Results of annual evaluation of the CEO and committee chairs. • Quarterly performance reports from Direct Reports. • Audit reports. • Board competency profile. • Governance effectiveness survey.
Residual risk	• Governance structure cannot respond quickly to events or ad hoc Regulators' requests. • No control over Director nominees, including their diversity or skills.

(Remaining risks after existing control measures)	
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	The risk is within tolerance, but continual improvement is necessary to maintain this level.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	None required, continual improvement is ongoing, through various oversight including by the by Governance Committee.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Regular and ongoing policy reviews. • Approval of budget and CEAB and CEQB work plans. • Annual approval of the Board committee and task force work plans. • Strategic performance monitoring and reporting. • Annual Board self-evaluation. • Annual evaluation of CEO and committee chairs (including CEAB and CEQB). • Annual third-party, financial audit. • Succession plan for CEO. • On-boarding process (orientation) and Director education. • Open meetings and publication of Board and committee minutes on the public website. • Annual approval of the CEAB and CEQB recruitment and succession plans. • Implementation of a Board management tool.

DIMINISHED NATIONAL COLLABORATION (BOARD RISK)

Likelihood (1-5)	2 – Unlikely (unlikely but not unforeseeable)	**Total**
Impact (1-5)	5 – Severe (if occurs, will require a restructuring of the purposes, governance, finances or operations of Engineers Canada in order to recover)	**10**
Target	The current level is acceptable but attention and continual improvement are required to sustain this level.	**5**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• Engineers Canada's success rests on its ability to understand and meet Regulators' expectations, incorporate their perspective in its activities, and foster national collaboration and consistency across jurisdictions. • Increasing international and national mobility of individuals and entities, without a clear, coordinated strategy between Canadian engineering regulators. • Continuing professional development will be mandatory nation-wide by January 2023.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Lack of Board direction or collaborative decision-making. • One or more Regulators ask that Engineers Canada take a collective stance on strategic issue and sufficient collaboration is not reached. • One or more Regulators has processes or policies that differ significantly or are incompatible with other Regulators'. • One or a few provincial or territorial governments dictate regulatory requirements that vary significantly or are incompatible with other Regulators'. • Ineffective consultation program. • Perception that collaboration is not possible due to legislative variations.
Potential consequences *(What could happen if the potential event(s) take(s) place)*	• Inability to reach consensus on major strategic issues. • Loss of value for Regulators. • Loss of membership in one or more international agreements. • Decrease or loss of Regulators' confidence. • Additional barriers to national or international mobility.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• The Board has been implementing Strategic priority 1.2, *Strengthen collaboration and harmonization* to define Regulators' desired degree of harmonization and identify areas for collaboration. Results are expected by the end of 2024. The creation of the Collaboration Task Force and its associated work provides an opportunity to demonstrate leadership and reflect this ideal in the deliberations of the Board.
Evidence *(How success of the existing controls is measured)*	• Renewal of Engineers Canada membership in international agreements. • Signed statement of collaboration from all regulators • Attendance at national meetings of Regulators. • Consultation feedback (Log-in required to access the consultation webpage).
Residual risk *(Remaining risks after existing control measures)*	• Lack of control over Regulators' actions (participation in consultation, adoption of consistent practices, use of programs, products and services, etc.). • Lack of control over provincial or territorial government(s) imposing requirements without considering other engineering Regulators' requirements. • Lack of time or interest from Regulators to develop consensus on programs, products and services.

	• Lack of direction from Regulators in terms of degree of consistency and areas for collaboration.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	This risk is above the risk tolerance of the Board.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	• None at this time, a strategic priority is underway to address this, and continual improvement is ongoing.

Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Several processes are in place to foster ongoing collaboration:
	  • Strategic plan development process and consultation program.
	  • Facilitate knowledge sharing and collaboration among Regulator staff during meetings (Chief Executive Officers, Admission, Practice, Discipline & Enforcement, Communications, Finance, and IT Officials and Outreach communities of practice).
	• Programs, products and services that serve multiple Regulators and are developed and improved with them (e.g. accreditation, 30 by 30, competency-based assessment, national position statements, national membership database, international institutions and degrees database, national engineering month).
	• Seek to foster collaboration outside regulatory requirements (e.g. tools for regulators staff; non-regulatory tools such as learning management system, best practices around organizational excellence etc.)

DIMINISHED SCOPE AND VALUE OF ENGINEERING REGULATION (BOARD RISK)

Likelihood (1-5)	4 - Likely (more likely to occur than not)	**Total**
Impact (1-5)	3 – Moderate (if occurs, will have an impact on delivering 2+ strategic priorities or 2+ purposes but Engineers Canada would likely recover with existing controls)	**12**
Target	Reduce likelihood to 3 (moderate) by the end of the Strategic Plan in 2024.	**9**

Trend *(When was the risk first identified, what is the trend)*	This risk was first put on the register in May 2020 following the discussion of the environmental scan for the 2022-2024 Strategic Plan. The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• Recent government and self-commissioned audit reports have highlighted the need for the profession to implement changes to governance, admission, professional practice, discipline, and enforcement practices to further demonstrate how engineering Regulators protect public interest. • Rapid technological advances have challenged Regulators to adapt their processes to effectively regulate in new areas of engineering practice. • The proportion of CEAB graduates that seek licensure is decreasing. There may be a perception that licensure is not required in some fields. • Canadian population is aging. A labour shortage is expected, as well as a lack of succession for businesses. • Engineers Canada supports Regulators in demonstrating the importance of engineering licensure and regulation to the public, governments, potential engineers, and engineering businesses. References are available in the Environmental Scan for the 2022-2024 Strategic Plan) • Lack of common approach to many regulator activities nation-wide (CPD, entity regulation, regulation of emerging disciplines, etc.). • Lack of common messaging on the value of engineering licensure and self-regulation. • Lack of data and involvement of industry and students in communicating the value of licensure. • Increasing international and inter-provincial/territorial engineering makes it difficult for engineering regulators to regulate the practice of engineering.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Engineering students do not become licensed. • Engineering entities do not become licensed, do not require their employees to be licensed and/or pay engineering graduates more than others. • Unlicensed individuals or engineers are responsible for an engineering failure or code of ethics breach in another country, province or territory. • Unlicensed entities practising engineering or engineering entities are responsible for an engineering failure or code of conduct breach in another country, province or territory. • Engineering failure in the media. • Unlicensed individuals and/or entities practising engineering in emerging disciplines do not seek licensure and Regulators do not effectively enforce their acts. • Engineers Canada does not support Regulators in all the cases above as requested.

Potential consequences *(What could happen if the potential event(s) take(s) place)*	• Regulators cannot demonstrate to their governments, public, individuals, or employers the value and need for licensure. • Decreasing number of individuals becoming engineering licensees. • Decreasing number of entities becoming licensed. • Loss of reputation for the engineering profession and self-regulation. • Media and/or public and/or government questioning the value of engineering self-regulation. • Provincial/territorial governments impose new governance models to engineering Regulators. • Erosion of the protection of the right to title and right to practise.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• Strategic priority 1.3, *Support regulation of emerging areas* provides more frequent reporting and a higher profile for this work to define emerging areas of practice. • Strategic priority 2.2, *Reinforce trust and the value of licensure* is developing and disseminating national value-of-licensure messaging in collaboration with Regulators with the goal of raising the profession's profile with engineering graduates, EITs and the public.
Evidence *(How success of the existing controls is measured)*	• New or revised Engineers Canada Papers provided to Regulators. • Regulatory research reports provided to Regulators. • National position statements, national issues statements, government submissions and government relations meetings and events related to licensure and regulation in emerging areas.
Residual risk *(Remaining risks after existing control measures)*	• Inconsistent participation in and use of programs, products or services by Regulators. • Lack of control over inconsistency in Regulators' actions regarding enforcement or their decision on whether to provide a path to licensure in emerging areas or for entrepreneurs. • Lack of control over the licensing of individuals and entities.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	This risk is above the risk tolerance of the Board.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	• The Board will be able to direct the CEO to suggest additional controls as part of the development of the 2025-2030 strategic plan.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	Several core purposes provide core programs, products and services that mitigate this risk: • 2: Facilitating and fostering working relationships between and among the Regulators. • 3: Providing services and tools that enable the assessment of engineering qualifications, foster excellence in engineering

	practice and regulation, and facilitate mobility of practitioners within Canada. • 5: Advocating to the federal government. • 6: Actively monitoring, researching, and advising on changes and advances that impact the Canadian regulatory environment and the engineering profession. • 8: manages our relationship with engineering student federations and facilitates and fosters working relationships between and amongst regulator outreach staff that work directly with public.

INSUFFICIENT REPRESENTATION OF MARGINALIZED PEOPLE IN ENGINEERING (BOARD RISK)

Likelihood (1-5)	4 – Likely (more likely to occur than not)	**Total**
Impact (1-5)	3 - Moderate (if occurs, will have an impact on delivering 2+ strategic priorities or 2+ purposes but Engineers Canada would likely recover with existing controls)	**12**
Target	Reduce the impact to 2 (minor) by the end of the Strategic Plan in 2024	**8**

Trend *(When was the risk first identified, what is the trend)*	This risk was first put on the register in May 2020 following the discussion of the environmental scan for the 2022-2024 Strategic Plan. The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• As of December 31, 2020, female engineers made up 14.2 percent of members and 20.6 percent of newly licensed engineers nationally. • Thirty per cent is the current representation goal we have set out for newly-licensed female engineers. • Gender-based discrimination and harassment exists at every stage in the engineering path (i.e. formative years, post-secondary, early-, mid-, and late-career) from their peers and colleagues than their male counterparts). • Increasingly the profession is also looking at Equity, Diversity and Inclusion, which includes female, Indigenous, racialized, internationally trained individuals, and LGBTQ2S+ individuals. • Indigenous peoples prefer to be considered outside the typical scope of EDI, to recognize the specific history of colonization and genocide against Indigenous peoples.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Increase in female engineering graduates does not correspond to increase in licensure attainment. Decrease in Regulators' and/or key players' support in increasing the equity, diversity, inclusion of the engineering profession. • Withdrawal of support from key players including champions, volunteers, Higher Education Institutions (HEIs), employers and students. • COVID-19 disproportionally affects women's employment rate, including potential future female applicants. • Increasing percentage of female undergraduate enrolment and graduation. • The engineering profession is not welcoming to members of marginalized groups nor internationally trained individuals. • Continuation of undervalue of the engineering license particularly within engineering disciplines that are of most interest to women (i.e. chemical, environmental).
Potential consequences *(What could happen if the potential event(s) take(s) place)*	• The profession does not reach the 30% of female engineers newly licensed by 2030. • The profession remains unwelcoming to marginalized groups representation targets are not met and talent is lost. • Reputation loss for Engineers Canada with Regulators, government, external stakeholders, and partners. • Profession does not fully protect public safety and public interest since it does not represent the full diversity of the perspectives and Canadian population.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• The Board has been implementing Strategic priority 2.1, *Accelerate 30 by 30*, which is expected to be completed by the end of 2024. • The Board has also been implementing Strategic priority 2.2, *Reinforce trust and the value of licensure*, which will showcase the diversity of the profession • EDI Training for Engineers and Geoscientists.

	• CEAB investigation of incorporating 30 by 30 into the accreditation process. • CEQB development of Guideline on workplace gender equity.
Evidence *(How success of the existing controls is measured)*	• Annual national membership report. • Annual 30 by 30 scorecard. • Annual Enrolment and Degrees Awarded report.
Residual risk *(Remaining risks after existing control measures)*	• Role limited to providing information and convening players, as Regulators manage the relationship with applicants for licensure, engineers, employers and local K-12 representatives. • Lack of control regarding the recruitment or retention of K-12 female-identifying students taking science and math in school. • Lack of control on how HEIs recruit or retain students, and limited influence in how HEIs promote licensure. • Lack of control on how employers recruit and retain female-identifying individuals and promote licensure to them.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	This risk is above the risk tolerance of the Board.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	• As per the Board's request, additional capacity will be added to the EDI department to investigate and develop an additional tactic regarding internationally trained graduates. • The Board will be able to direct the CEO to suggest additional controls as part of the development of the 2025-2030 strategic plan.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• EDI training for engineers and geoscientists has been offered. • Engineers Canada fosters collaboration with engineering Regulators, strategic partners, and stakeholders to increase equity, diversity and inclusion (EDI) in the profession. • Advocate to the federal government in support of gender equity, pay equity, and policies that support women in engineering. • Use of an annual scorecard by Regulators and analysis of results. • Promote a diversity of women in engineering as part of the Canadian Engineering Memorial Foundation • Convene influential figures and facilitate the 30 by 30 K-12, post-secondary, and early career working groups.

REDUCED LONG TERM FINANCIAL VIABILITY (BOARD RISK)

Likelihood (1-5)	3 - Moderate (fairly likely to occur)	**Total**
Impact (1-5)	4 – Major (if occurs, will have an impact on delivering on 2+ strategic priorities or 2+ purposes and Engineers Canada could only recover with additional controls)	**12**
Target	Maintain the current level.	**12**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• Engineers Canada has the following revenue streams: o **Membership dues:** approved annually by Members during their annual meeting and coming into effect 18 months after. o **Affinity revenues:** result from agreements between Engineers Canada and providers of financial and insurance products. PEO makes a decision annually whether to avail itself of the funds or not for the TDI affinity program. o **Investment funds:** a certain percentage of revenues invested in money market, bonds and equities.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Marked decrease in any one revenue source. • Members ignore the Board's recommendation and adopt a significantly lower per capita assessment fee. • Having lowered the per capita assessment fee, the Members are unwilling or unable to raise it following a Board recommendation to do so. • PEO avails itself of the affinity funds. • Low rate of return of investments. • A Regulator leaves the affinity program, resulting in a decrease of revenue over time. • Older members do not renew their membership due to new mandatory continuing professional development requirements.
Potential consequences *(What could happen if the potential event(s) take(s) place)*	• Loss of revenues. • Loss of reputation with providers of financial and insurance products. • Regulators dissatisfaction or loss of confidence. • Additional Regulator(s) leave the affinity program. • Operational budget declines significantly in the long term, resulting in inability to deliver on the core purposes of Engineers Canada and/or a need to terminate staff. • Significant increase in the per capita assessment fees.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• No additional improvements are necessary for now.
Evidence *(How success of the existing controls is measured)*	• Revenue as predicted in the budget and reported in the audit. • Affinity program performance reporting.
Residual risk	• There is currently a risk regarding the TD affinity revenues in the long-term as the percentage of revenue going to the Regulator has increased from 51% to 90% for ne

(Remaining risks after existing control measures)	policyholders. It is anticipated that the impact will be a 1% decrease in TD revenue each year.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	Risk is within acceptable tolerance level.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	None required, continual improvement is ongoing through oversight by the FAR Committee.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Operational budget does not include PEO affinity funds. • Relationship management with affinity program providers. • Discussion and projection of expected membership numbers (i.e. future dues revenues) with Regulators. • Investment policy. • Use of long-term contracts with affinity providers. • Use of actuarial expertise to assess and continually improve affinity programs. • Bylaw to control the size of Engineers Canada's reserves through annual review of the per capita assessment fee. • Net asset structure and policy, and active management of reserves. • The TD agreement is a twelve-year contract, up for renewal in 2030.

Operational risks

The following heat map provides an overview of operational risks (risks managed by the CEO with oversight by Engineers Canada Board). No changes were made to operational risk scores since April 2021.

LIKELIHOOD	IMPACT				
	1 **Insignificant** If occurs, will have little or no impact on delivering strategic priority(ies) or purpose(s)	**2** **Minor** If occurs, will have an impact on delivering 1 strategic priority or 1 purpose; Engineers Canada would recover with existing controls	**3** **Moderate** If occurs, will have an impact on delivering 2 + strategic priorities or 2+ purposes; Engineers Canada would recover with existing controls	**4** **Major** If occurs, will have an impact on delivering on 2+ strategic priorities or 2+ purposes; Engineers Canada could only recover with additional controls	**5** **Severe** If occurs, will require a restructuring of the purposes, governance, finances or operations of Engineers Canada in order to recover
5 **Extremely Likely** - Almost certain to occur					
4 **Likely** - More likely to occur than not					
3 **Moderate** - Fairly likely to occur		Financial compliance (OR)	Client satisfaction (OR)		
2 **Unlikely -** Unlikely but not unforeseeable			Corporate compliance (OR) Human resources (OR) Reputation (OR)	Infrastructure and information integrity (OR)	
1 **Low** -Unlikely to occur					

CLIENT SATISFACTION (OPERATIONAL RISK)

Likelihood (1-5)	3- Moderate (Fairly likely to occur)	**Total**
Impact (1-5)	3 – Moderate (if occurs, will have an impact on delivering 2 + strategic priorities or 2+ purposes but Engineers Canada would likely recover with existing controls)	**9**
Target	Reduce the likelihood to 2 by the end of the Strategic Plan in 2024 through Strategic priority 3.1. Uphold our commitment to excellence and additional controls.	**6**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	Engineers Canada's ability to deliver high quality and effective programs, products and services rests on its ability to identify and meet client expectations, and innovate and continually improve our programs, products and services, While Regulators are the owners and primary clients of Engineers Canada, the organization has also identified the following additional external clients: Engineering Deans Canada and HEIs (includes educators and administrators), and the engineering community (includes students and graduates of CEAB-accredited programs, non-CEAB engineering graduates, engineers in training, engineers, and engineering businesses).-Engineers Canada also has internal clients: the Board, CEAB, CEQB, volunteers and staff. Engineers Canada does not have an organization-wide view of all clients' needs nor an approach to serve them.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Delivery of program, product or service that does not meet major client needs. • Competitors offer alternative programs, products or services that better meet client needs. • Lack of clarity on the needs, requirements or priorities of clients. • Staff's inability to deliver as indicated by measurements, monitoring and/or feedback indicating: o Decreasing effectiveness of consultation program; o Decreasing effectiveness of internal communications; o Not achieving intended outcomes of programs, products, services; and/or, o Poor client service.
Potential consequences *(What could happen if the potential event(s) take(s) place*	• Programs, products or services are only partially used or not used at all by clients. • Dissatisfied client(s). • Clients leave program(s). • Inefficient resource allocation or lack of clear direction for core purposes and internal services. • Staff disengagement or low morale.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• The Board has been implementing Strategic priority 3.1, *Uphold our commitment to excellence,* that supports effective client satisfaction, process and project management. • Implementing program evaluation approach to develop an organization-wide means to measuring success, including client service delivery.
Evidence	• Measurement (organizational benchmarking) against the Excellence, Innovation, and Wellness standard.

(How success of the existing controls is measured)	• Positive retention rate of clients (e.g. regulators, accreditation, affinity, etc.). • Consultation on work plans, general directions, draft documents (Log-in required to access the consultation website). • Informal feedback between clients and staff. • Use of programs, products and services (tracked for some programs, products and services).
Residual risk *(Remaining risks after existing control measures)*	• Inconsistent and sometimes conflicting direction from groups of clients. • No organization-wide approach to client management (e.g. proactively identifying client needs, sharing client knowledge, responding to client feedback). • Complex governance structure can result in slow response to client needs. • No clarity regarding overall client priorities and its impact on planning and resource allocation. • Dependency on volunteers to deliver some products and services. • Consultations make development of timely products and services challenging sometimes.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	This risk is not acceptable in the long-term, and additional controls are underway.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	• Explore ways to implement improved client management processes in 2023. • Explore ways to make the consultation process more responsive and flexible in 2023.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Consultation program which includes continual improvement of the consultation process based on annual report and internal reviews. • Internal communications strategy. • Informal information gathering among staff and between staff and clients. • implementation of the Regulator communications approach.

CORPORATE COMPLIANCE (OPERATIONAL RISK)

Likelihood (1-5)	2 - Unlikely (unlikely but not unforeseeable)	**Total**
Impact (1-5)	3 – Moderate (if occurs, will have an impact on delivering 2+ strategic priorities or 2+ purposes but Engineers Canada would likely recover with existing controls)	**6**
Target	No change is expected for this risk as it is typical for any operating business	**6**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• Engineers Canada has an obligation to comply with various statutory and common law obligations and requirements.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Legal or regulatory action brought against or sustained by Engineers Canada. • Failure to monitor and/or ensure compliance with corporate policies. • Failure to meet or comply with legal obligations.
Potential consequences *(What could happen if the potential event(s) take(s) place)*	• Application of damages, fines, and/or penalties, resulting in financial hardship. • Reputation loss. • Loss of trust with the Board or Regulators.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	No major improvements required at this stage.
Evidence *(How success of the existing controls is measured)*	• Training and audit results. • No current (or recent past) legal actions filed.
Residual risk *(Remaining risks after existing controls)*	• Corporate bodies are always susceptible to some legal challenge, whether real or threatened.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	This risk is acceptable, but continual improvement is necessary to retain this level.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	New event registration system that complies with privacy obligations. Continuous improvements are ongoing.

Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Internal legal department oversees compliance and works with staff to ensure legally sound practices. • Internal policies and procedures, with processes defined for regular reviews and training. • Legal reviews of all contractual agreements, including employment contracts, requests for proposals and memorandum of understanding. • Privacy audit completed annually, and training provided to all staff.

FINANCIAL COMPLIANCE (OPERATIONAL RISK)

Likelihood (1-5)	2 - Unlikely (unlikely but not unforeseeable)	**Total**
Impact (1-5)	3 – Moderate (if occurs, will have an impact on delivering 2 + strategic priorities or 2+ purposes but Engineers Canada would likely recover with existing controls)	**6**
Target	No change is necessary, as it is typical for any operating business.	**6**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• Engineers Canada must ensure that financial resources are effectively managed and reported accurately.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Misreporting to the Board, auditors or other compliance bodies. • Employee(s) commit fraud. • Substantive errors in the budget. • Significant technology failure.
Potential consequences *(What could happen if the potential event(s) take(s) place)*	• Inaccurate reporting to the Board. • Financial loss. • Litigation. • Loss of trust or dissatisfaction of the Board or Regulators. • Improper filings (e.g. payroll taxes). • Data loss.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	No major improvements required at this stage.
Evidence *(How success of the existing controls is measured)*	• Annual audit report. • Quarterly financial reports. • Month-end financial statements. • Annual budget with three-year projections.
Residual risk *(Remaining risks after existing controls)*	• Limited ability to segregate duties due to size of finance team.
Risk tolerance *(Remaining risk accepted or not)*	The risk is within acceptable tolerance levels.
Additional Controls *(Future actions to mitigate risk, if not tolerated)*	None required, continual improvement is ongoing.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Annual external audit process. • Month-end close procedures. • Expense and cash approval processes. • Policies for staff on travel and expense reimbursement, financial commitments and expenditures, corporate credit card, procurement, financial signing authority and delegation, and fraud. Finance database and environment settings are automatically backed up by Microsoft and kept for 28 days.

HUMAN RESOURCES (OPERATIONAL RISK)

Likelihood (1-5)	2 – Unlikely (unlikely but not unforeseeable)	**Total**
Impact (1-5)	3 – Moderate (if occurs, will have an impact on delivering 2 + strategic priorities or 2+ purposes but Engineers Canada would likely recover with existing controls)	**6**
Target	No change is expected for this risk as it is typical for any operating business.	**6**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• Engineers Canada's ability to deliver high quality and effective programs, products and services rests on its ability to recruit and retain quality staff. • Staff performance and knowledge retention is critical to deliver products and services to Regulators and stakeholders. • There is uncertainty on the future regarding COVID-19 and vaccine mandates. • Higher inflation results in increase pressure cost for the organization and staff expectations for a salary increase. • Increasing competition and benefits (e.g., flexible work arrangements, work hours, shortened work week) for skilled workers.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• CEO leaves abruptly. • Executive team member leaves abruptly. • Critical mass of staff leaves within a short period of time / high staff turn-over. • Inability to recruit or retain competent staff in core positions. • New legislative obligations. • Staff who have access to key operational technology tool (HR, finance) leave, with no trained back-up. • A high demand for new hires
Potential consequences *(What could happen if the potential event(s) take(s) place)*	• Lack of organizational leadership in key positions. • Skills shortage or lack of skills in critical areas. • Delay(s) and/or decreased quality of programs, products or services. • Regulators and stakeholders dissatisfaction with projects, products or services. • Loss of core knowledge. • Positions remain vacant or positions need to be reclassified to accommodate less experience workforce. • Staff disengagement or low morale.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• Succession Planning Policy and Succession Plan. • The CEO and the Senior Leadership Team (SLT) have developed and are implementing succession planning process for all staff
Evidence *(How success of the existing controls is measured)*	• CEO succession plan. • Succession plan for all staff including Senior Leadership • New Performance Management System to allow for ongoing feedback • Review of compensation and benefits program. • Social and Wellness survey results. • Staff turnover rate.

	• Employee engagement survey results (available in Q4 2022). • Annual review of professional development for all staff. • Feedback provided from new hires on onboarding process with onboarding survey. • Exit Interviews conducted for staff leaving the organization by HR • Measurement (organisational benchmarking) against the Excellence, Innovation, and Wellness standard. • Employee Survey.
Residual risk *(Remaining risks after existing control measures)*	• There is currently no Executive team succession planning process. • Improvements to the information repository on SharePoint are not completed. • Retention due to lack of advancement in a small, flat organization. • Difficulties to recruit bilingual candidates in National Capital Region. • Lack of organization-wide approach to recognition. • Lack of knowledge retention strategy.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	This risk is acceptable, but continual improvement is necessary to retain this level.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	• Create and adopt a recognition program. • Improve prioritization of work and planning.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Succession planning for the CEO. • CEO 360º assessment. • Staff survey to measure satisfaction and actions plans to address gaps. • Competitive compensation and benefits program. • Onboarding program. • Staff professional development. • Performance management program and processes. • Wellness program. • Administration of staff surveys linked to health and wellness. • Reward and recognition program (including regular benchmarking of salaries against the market). • Recruitment & retention program. • Improved knowledge management through IT strategy. • Leadership Training Program is being implemented and will evolve based on organizational needs. • Succession Planning questionnaire to identify potential successors for all positions. • The Board has been implementing Strategic priority 3.1, *Uphold our commitment to excellence,* that support ensuring effective Human Resource practices satisfaction. • Offer flexible work arrangements (when appropriate).

INFRASTRUCTURE AND INFORMATION INTEGRITY (OPERATIONAL RISK)

Likelihood (1-5)	2 - Unlikely (unlikely but not unforeseeable)	**Total**
Impact (1-5)	4 - Major (if occurs, will have an impact on delivering on 2+ strategic priorities or 2+ purposes and Engineers Canada could only recover with additional controls)	**8**
Target	No change is expected for this risk as it is typical for any operating business.	**8**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• Engineers Canada is vulnerable to technological, infrastructure and security threats and breaches. • Currently, information is stored in two major areas: in on-premise servers and in cloud infrastructure. For the last few years, resources have been allocated to move all information to the cloud through the Space Program. • COVID-19 brought many new challenges including new health and safety procedures for the office, provision of remote IT services and protection of the organization against security and information breaches while staff work remotely.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Staff do not understand or comply with information management requirements. • Staff do not understand or comply with IT policies and procedures. • Damage to physical infrastructure. • Destruction or theft of information or equipment. • Corruption or modification of information. • Removal or loss of information or equipment. • Disclosure of information. • Interruption or denial of services.
Potential consequences *(What could happen if the potential event(s) take(s) place)*	• Loss of core information. • Inability to communicate with staff. • Privacy breaches. • Damage or destruction of physical or technological infrastructure. • Reputation loss. • Unreliable services to staff, Regulators and stakeholders. • Inability to deliver on programs, products or services.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• No additional improvements are required at this point in time.
Evidence *(How success of the existing controls is measured)*	• Frequent breach attempts have occurred on Engineers Canada's digital properties in the last year, but none has been successful. Protocols were followed to handle breach events and attack vectors were mitigated. • Despite inevitable hardware failures, no data has been lost or corrupted. All backup systems and other fail-safe mechanisms have allowed data integrity to be maintained.
Residual risk	• Unknown security or information breach with staff working remotely. • Servers could unexpectedly stop working, potentially causing data loss, unreliable service or staff, Regulators and stakeholder dissatisfaction.

(Remaining risks after existing control measures)	• Some information continues to be stored on aging servers. • New emerging (zero day) threats to data/digital infrastructure. • Limited time for IT to devote to security hardening, prevention and monitoring.
Risk tolerance *(Remaining risk is accepted or is above tolerance level)*	This risk is acceptable, but continual improvement is necessary to retain this level.
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	None required, continual improvement is ongoing
Continuous improvements (Operational activities without a beginning or an end underway to prevent or mitigate the risk)	• IT policies on Information technology security incidents, (including protocols for any breaches to our digital properties), Acceptable Use of IT, and Password requirements. • Business continuity plan and process for annual reviews. • Space program and information architecture improvements. • Emergency response procedure and staff training. • Vendor management process and contracts. • Staff awareness of phishing and other social engineering threats. • Onsite/offsite backup strategy and monitoring. • Nagios monitoring system to forewarn of failures. • Cloud backup systems put in place for possible “internal” bad actors. • Automatic virus software update system. • Laptop automatic file backup in case of laptop failure/loss. • All staff use multi-factor authentication for 365 logins. • Maintenance of firewall software and firewall AV/malware protection. • IT team’s continued expansion of knowledge in areas of cloud service management and security, through courses, webinars and online learning. • Acquisition of specialists to instruct and guide IT team for sensitive deployments or security sensitive implementations. • Implementation of a new NMDB solution that is cloud based • Upgrades to O365 licensing allows us to leverage new security features and endpoint controls.

REPUTATION (OPERATIONAL RISK)

Likelihood (1-5)	2 - Unlikely (unlikely but not unforeseeable)	**Total**
Impact (1-5)	3 – Moderate (if occurs, will have an impact on delivering 2 + strategic priorities or 2+ purposes but Engineers Canada would likely recover with existing controls)	**6**
Target	No change is expected for this risk as it is typical for any operating business.	**6**

Trend *(When was the risk first identified, what is the trend)*	The score of this risk was the same in 2021 and 2022.
Current situation *(How did the risk emerge)*	• Engineers Canada's ability to deliver high quality products and services, to represent the national voice of the engineering Regulators and profession, and to advocate to the federal government partially depends on high credibility and a strong brand.
Potential event(s) *(What threats or opportunities could trigger the realization of this risk)*	• Negative media coverage about Engineers Canada. • Negative comments about Engineers Canada on social media from influential figures. • Federal government consults or publicly acknowledges other organizations on national engineering regulatory issues and the engineering profession. • Conflicting stances communicated to Regulators or stakeholders. • Incorrect information on the corporate website. • Misunderstanding of Engineers Canada's role in the regulation of engineering.
Potential consequences *(What could happen if the potential event(s) take(s) place*	• Loss of credibility with Regulators, engineers, federal government, or the public. • Federal government consults other organizations on national engineering regulatory matters.
Major improvements *(Projects with a beginning and an end underway to prevent or mitigate the risk)*	• Implementing a regular website content review/retention process to review pages systematically for accuracy/relevance/quality.
Evidence *(How success of the existing controls is measured)*	• Lack of incidents in the media. • Misrepresentations corrected in a timely way. • Number of federal government requests for input. • Communications policies and processes regularly reviewed and kept current. • Informal stakeholder feedback loops.
Residual risk *(Remaining risks after existing control measures)*	• Achieving 100% website accuracy would require excessive resources relative to benefit. • Cannot influence media stories after publication. • Cannot address or eliminate all negative comments on social media from influential figures. • Cannot prevent other organizations from trying to brand themselves as the national engineering advocacy body.
Risk tolerance	• This risk is acceptable, but continual improvement is necessary to retain this level.

(Remaining risk is accepted or is above tolerance level)	
Additional Controls *(Future actions to mitigate risk, if risk not tolerated, with expected timeframe)*	None required, continual improvement is ongoing.
Continuous improvements *(Operational activities without a beginning or an end underway to prevent or mitigate the risk)*	• Daily media and social media monitoring. • Consultation program. • Regular government advocacy activities and interventions (e.g., House of Commons and Senate committees, meetings with elected officials or senior federal officials). • Communications policies: social media, brand management, media relations, official languages, process to respond to public and media enquiries.

BRIEFING NOTE: For decision

New Guideline for engineers and engineering firms on Indigenous consultation and engagement	4.2a
Purpose:	To approve the new Guideline for engineers and engineering firms on Indigenous consultation and engagement
Link to the Strategic Plan / Purposes:	Core purpose 3: Providing services and tools that enable the assessment of engineering qualifications, foster excellence in engineering practice and regulation, and facilitate mobility of practitioners within Canada. Core purpose 9: Promoting diversity and inclusivity in the profession that reflects Canadian society.
Link to Corporate Risk Profile:	Insufficient representation of marginalized groups in engineering (Board risk) Diminished scope and value of engineering regulation (Board risk) Reputation (Operational risk)
Motion(s) to consider:	THAT the Board, on the recommendation of the CEQB, approve the new Guideline for engineers and engineering firms on Indigenous consultation and engagement (public distribution)
Vote required to pass:	Simple majority
Transparency:	Open session
Prepared by:	Ryan Melsom, Manager, Qualifications and CEQB Secretary
Presented by:	Margaret Anne Hodges, CEQB Chair

Problem/issue definition

- Engineers are ethically obligated to hold the public's protection paramount; however there are many historical and ongoing cases where inadequate or non-existent consultation and engagement practices with Indigenous communities have led to poor engineering outcomes and a failure to protect Indigenous peoples.
- Thus, following guidance from the Indigenous Advisory Committee of Engineers Canada, the Engineers Canada Board requested in 2019 that the Canadian Engineering Qualifications Board (CEQB) undertake the development of a Guideline for engineers and engineering firms on Indigenous consultation and engagement. Doing so supports *Core purpose 9: Promoting diversity and inclusivity in the profession that reflects Canadian society*.
- Motivations for developing this guideline draw from pivotal works of reflection, truth telling, and appeals for action, such as the findings of the Royal Commission on Aboriginal People (RCAP), the Truth and Reconciliation Commission's (TRC) Calls to Action, the Missing and Murdered Indigenous Women and Girls (MMIWG) Calls for Justice, and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
- The TRC noted that to maintain a mutually respectful relationship between Aboriginal and non-Aboriginal peoples "there has to be awareness of the past, an acknowledgement of the harm that has been inflicted, atonement for the causes, and action to change behaviour."
- This guideline reflects Engineers Canada's desire to acknowledge past harms, to strengthen relationships, and to contribute to improved engineering outcomes and collective healing. The content of the guideline, and the conversations it initiates, are intended to empower users to practice engagement with humility and empathy.

Proposed action/recommendation

- That the Board, on the recommendation of the CEQB, approve the new *Public guideline for engineers and engineering firms on Indigenous consultation and engagement*, which will be made available on the public website.
- The CEQB provides services and tools to help regulators, engineers, and applicants for licensure by enabling the assessment of engineering qualifications, by fostering excellence in engineering practice and regulation, and by facilitating mobility.
- The guideline represents a substantial national collaboration among Indigenous and non-Indigenous engineers, engineering stakeholders, regulators, and numerous other interested groups and can serve as a reliable guide to help engineering practitioners and engineering educators build competencies that will better serve Indigenous members of the public.
- Engineers Canada will seek opportunities to promote and share the guideline's content and recommendations.

Risks

- No risks were identified.

Financial implications

- N/A

Benefits

- CEQB guidelines represent consensus-based, collaborative national perspectives on key topics affecting the profession and its regulation. This guideline can be used to support regulators in the development of policies and programs designed to better protect the Indigenous public.
- The guideline represents a shift from a "tick-box" approach to consultation, which has failed to protect Indigenous peoples, to a model of engagement, which emphasizes the importance of long-term relationship building, community involvement, and integration of Indigenous Knowledge.
- This guideline represents a first step in Engineers Canada's reconciliation journey. It has been developed through a collaborative approach which valued the incorporation of Indigenous perspectives and knowledge as key to the process. Following publication, it is intended to become a resource for building stronger and more extensive relationships with Indigenous engineers and communities.
- While there is no requirement to use the guideline, engineers and engineering firms wishing to improve consultation practices with Indigenous communities will have clear guidance on how to build meaningful, respectful consultation and engagement practices, leading to better engineering outcomes, as well as multiple social and economic benefits.
- Educators will have a resource to prepare the next generation of engineers for meaningful consultation and engagement practices with Indigenous communities.

Consultation

- In 2021, the CEQB Practice Committee was charged with the development of a Guideline for engineers and engineering firms on Indigenous consultation and engagement. The committee is comprised of CEQB members and regulator staff. Additionally, three members of the Indigenous Advisory Committee of Engineers Canada served as liaisons during the early development of the project and were later added as voting members of the CEQB Practice Committee.
- The creation of the guideline adhered to the development and consultation process laid out in Board Policy 9.2: Qualifications Board products. However, on the guidance of the Indigenous-led consultation team, the process was enhanced to be more inclusive.

  - For example, the CEQB's typical single-workshop format shifted to a series of collaborative "gatherings", inviting a wider range of practitioners and operators than would be typical of such a workshop. The gathering included blessings and closing remarks by Elder Norman Meade, and followed a talking circle format, which allowed for participation of all attendees. Attendance of Indigenous participants at the five workshops was as high as 53 per cent.
  - It should be noted that while there was substantial participation from Indigenous people throughout the process, it was not possible within the project's framework and resource constraints to capture the vast range of diversity of Canada's 360+ Indigenous communities and their members. Rather, the consultant team opted for a selective approach, focusing on those with direct relationships to engineering (e.g., engineers, operators, community infrastructure experts, regulators).
  - The gathering approach was uniquely successful, in that its insights were synthesized to create a general direction document that, upon consultation with regulators, officials, and stakeholders, required no revision.
- A draft of the guideline was circulated for consultation among project participants and their networks, and Engagement during the guideline consultation phase was exceptionally high, with 117 feedback items from engineers practicing in this area, Indigenous and non-Indigenous guideline stakeholders, the Engineers Canada Indigenous Advisory Committee, and five regulators. All comments and committee responses were considered and addressed by the CEQB Practice Committee.
  - Notably, substantial comments were made by reviewers regarding the final format and presentation of the paper. These are to be considered as part of a larger communications and outreach strategy for this work, to be executed following its approval at the Engineers Canada Board level.

Next steps (if motion approved)

The Public guideline for engineers and engineering firms on Indigenous consultation and engagement will be published on the public website.

Appendices

- **Appendix 1:** Public guideline for engineers and engineering firms on Indigenous consultation and engagement

Guideline for engineers and engineering firms on Indigenous consultation and engagement

submitted by

Canadian Engineering Qualifications Board

May 26, 2023

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Guideline for engineers and engineering firms on Indigenous consultation and engagement

1 Background

1.1 Motivations and Relationships

Engineers play a role in serving society through application of engineering principles to improve our communities while holding paramount the protection of the public.[1] In order to serve communities appropriately, Engineers must have an understanding of their values, goals, priorities, and context. Within this context, there are many cases where inadequate or non-existent consultation and engagement practices with Indigenous communities have caused or perpetuated harms.

The motivations for developing this guideline are drawn from this recognition as well as from pivotal works of reflection, truth telling, and appeals for action, such as the Royal Commission on Aboriginal People (RCAP),[2] the Truth and Reconciliation Commission's (TRC) Calls to Action,[3] the Missing and Murdered Indigenous Women and Girls (MMIWG) Calls for Justice,[4] and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)[5]. The act of reconciliation is defined by the TRC[6] as:

> *Establishing and maintaining a mutually respectful relationship between Aboriginal* [i] *and non-Aboriginal peoples in this country. In order for that to happen, there has to be awareness of the past, an acknowledgement of the harm that has been inflicted, atonement for the causes, and action to change behaviour.*

This guideline reflects Engineers Canada's desire to strengthen relationships and to contribute to improved community outcomes and collective healing. Relationship building goes beyond engineering projects. The content of the guideline, and the conversations it initiates, are intended to empower the user to practice engagement with humility and empathy.

1.2 Consultation and engagement

The terms *consultation* and *engagement* carry different meanings, despite often being used interchangeably. The Crown has legal duty to consult[ii] Indigenous communities and possibly accommodate when a decision will impact asserted or established Aboriginal rights.[7] Engagement differs from consultation in that it involves building relationships outside of legal obligations with the intention of establishing trust and understanding and seeks reciprocity between parties, regardless of whether the engineer or firm is acting on behalf of the Indigenous community or for a proponent not affiliated with the community.

The act of consultation is more than an exchange of information and note taking. It should represent a willingness to listen and discuss Indigenous Peoples' concerns and to be prepared to accommodate their

[i] The term "Aboriginal" is used in legal and historical contexts. See Appendix A Glossary for the difference between the terms Indigenous, Aboriginal, and Indian.

[ii] The duty to consult, and in some cases accommodate, was born out of Section 35 of the Constitution Act, 1982 and made legally required through numerous Supreme Court of Canada challenges. While a Crown responsibility, the duty can be delegated to other parties in some situations. See Appendix B for more on the duty to consult.

concerns.[8] Engagement explores opportunities beyond community involvement in the project delivery, such as the supporting their efforts to assert sovereignty through strengthening their governance systems.

The term *consultation*, then, refers to a legal obligation, and has less to do with motivations based on building the trusting relationships and reciprocity that are fundamental to reconciliation. For the purposes of this guideline, the guideline will focus and use ***engagement*** and mention ***consultation*** when the context refers to the legal obligation to consult.

1.3 Free, prior, and informed consent

Originally adopted by the United Nations General Assembly in 2007, Canada endorsed UNDRIP in 2016 and is currently in the early stages of implementing it through legislation like the United Nations Declaration on the Rights of Indigenous Peoples Act[9] and British Columbia's Declaration on the Rights of Indigenous Peoples Act.[10]

Within UNDRIP, is the principle of obtaining the free, prior, and informed consent (FPIC) of communities before proceeding with projects that will impact them.[11] Appendix C has multiple learning resources, including resources on FPIC and its operationalization, which is the subject of much public discourse and will influence engineering projects.[12]

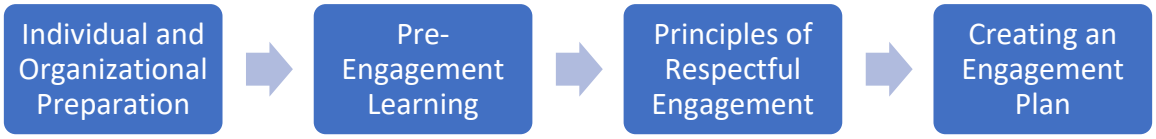
1.4 Safety, security, and benefit to Indigenous women and girls

For engineers and engineering firms serving the resource-extraction and development industries, actions recommended in Section 13 of the MMIWG Calls for Justice demonstrate how the engineering profession's obligation to hold paramount public safety,[13] in this context, should be viewed to include marginalized and at-risk groups. Notably, Call for Justice 13.1 states:

> *We call upon all resource-extraction and development industries to consider the safety and security of Indigenous women, girls, and 2SLGBTQQIA people, as well as their equitable benefit from development, at all stages of project planning, assessment, implementation, management, and monitoring.*

2 Using the Guideline

This guideline has been written for engineers and engineering firms who interact with Indigenous communities to provide guidance in preparing for and planning engagement that observes Indigenous protocols and meets the project and community's needs. This guideline presents common principles that underlie successful engagement. It covers the content illustrated below.



This guideline is not a legal opinion and does not offer guidance on whether a project triggers the Crown's duty to consult. Please refer to Appendix B for more on the Duty to Consult. Developed through engagement with engineering stakeholders and Indigenous community members, the intent of the guideline is to highlight the motivations and required preparation to conduct meaningful engagement along with practical principles to apply.

While some communities and organizations have established their own engagement protocols and best practices, some Indigenous communities and engineering stakeholders[iii] can use the guideline as the foundation for developing individualized engagement approaches or expectations.

Readers are encouraged to consider the following as they apply this guideline:

1. **This guideline is a living document.** It will evolve as relationships are developed and as policies such as UNDRIP and collective responses to the TRC Calls to Action and the MMIWG Calls for Justice emerge.
2. **This guideline supports a learning journey.** It is written for users with a range of experience levels. The content may create discomfort, so engaging with humility, empathy, an open mind, and sincerity is important. This will allow users to learn from missteps, gaining experience and confidence as they progress.
3. **Examples are potential starting points.** Where possible, the engagement principles of the guideline will be illustrated through quotes provided by the engineering stakeholders and Indigenous community members who contributed to the guideline development process through virtual gatherings and surveys. These experienced and diverse perspectives will be identified as ***Engagement Insights***. When interpreting examples, it is critical for guideline users to recognize that there is not one single Indigenous experience that represents all Indigenous Peoples' perspectives or cultures.
4. **The context of words is important.** Terms relating to Indigenous engagement are described in the glossary found in Appendix A. Some of these terms may have specific meanings in the context of Indigenous engagement. Due to the diversity of Indigenous cultures and types of Indigenous groups[14] engineers will engage with, the guideline will refer to all Indigenous groups[iv] as ***communities***.

When applying the principles in this guideline, a user may encounter competing imperatives between project expectations and the Indigenous communities' priorities. While each context will differ, engineers will need to steward project design preferences and client expectations with public safety and what the community identifies as in their best interest. This often places the engineer in the challenging position of advocating for appropriate process and resources because engagement practices that seek to address systemic injustice facing communities are often not specifically required. Engagement practices may need to extend beyond strict legal obligations to meet the engineer's moral and ethical obligations.

[iii] Other users will find the principles herein valuable whether they be researchers, contractors, or academic institutions.

[iv] Indigenous people form numerous types of groups which can be involved in the engagement process or be a source of information. Examples of these different groups include a First Nation, Indian Band, Tribal Council, Inuit, or Metis Settlement. The guideline user should research what group(s) to engage with.

3 Individual and Organizational Preparation

A foundational knowledge in Indigenous history, cultures, and the on-going effects of settler colonialism is a key component of successful engagement that will assist engineers in developing authentic and respectful relationships with Indigenous communities. It is highly recommended that project teams undertake Indigenous relations and intercultural training.

3.1 What engineers need to know

The training and preparation necessary will vary depending on the existing team competencies and individual experience. Individual and organizational preparation before engaging should include:

- Defining your individual positionality, which refers to the social and political contexts that shape your identity and influences your outlook and worldview. Reflect on the following questions influence your work as an engineer.:
    - Where were you born and raised?
    - On whose traditional territory do you live and work?
    - How is your culture represented where you live?
    - Are you free to observe and practice your spirituality?
    - What other privileges do you enjoy?
- Becoming conscious of your positionality, influence, and responsibilities as engineers and members of society can elicit strong emotions, particularly at moments when you feel your core self-concept is being challenged. Depending on your positionality, familiarizing yourself with the concepts of white fragility[15] and settler fragility may help you better understand such reactions.
- Developing intercultural competence, which encompasses an understanding of how cultures are expressed and having the ability to work and communicate effectively with other cultures.
- Increasing bias awareness, recognizing that our biases can influence our assessment of the engagement process and the need to see the engagement process through different lenses.
- Learning about settler colonial history, including exposure to RCAP, the TRC Calls to Action, and the MMIWG Calls for Justice because they all represent extensive engagement with Indigenous people.
- Understanding how to incorporate trauma-informed engagement practices, which is a process of engaging with people who have experienced trauma.[16]

Expect the above preparations and reflections to stir strong emotions and challenge some of your biases. While potentially uncomfortable, embrace the process and bring others along with you. Decolonization requires an honest examination of political, legal, and societal norms that maintain settler control over Indigenous land and resources and continue to suppress Indigenous sovereignty and self-determination. Decolonization is not a singular event, but a journey of learning, reflecting, and action.

As organizations learn and begin to develop respectful engagement practices, the following considerations should be applied:

- **Allyship**: consider ways to advance reconciliation through other business practices such as recruitment and hiring, community capacity building, and community project involvement.
- **Offloading responsibility:** Not all Indigenous consultants or staff will want to be the educator in this space, which is a common request during this important organizational training.

There are multiple ways to prepare and build organizational competencies. Appendix C has a list of learning formats and resources to assist individuals and firms to start the learning process, and there are many other resources available online.

While the above topics are foundational to practitioners working in this space, exposure to Indigenous art, literature and stories, and music will enrich the guideline user's journey. Unfortunately, it is common to view Indigenous history as traumatic without celebrating the resiliency and beauty contained within Indigenous communities. Appendix C provides sources the reader can explore.

Engagement Insight – University Researcher

We ensure all students or staff who were brought on board go through proper training and orientation, so they could prepare for better engagement with the communities. A significant emphasis of such training is highlighting the importance of listening to the stories and concerns of the communities.

3.2 Who needs the preparation and training

The TRC Calls to Action #57 and #92 call upon governments and the corporate sector to educate public servants, management, and staff[17]:

> *on the history of Aboriginal peoples, including the history and legacy of residential schools, the United Nations Declaration on the Rights of Indigenous Peoples, Treaties and Aboriginal rights, Indigenous law, and Aboriginal–Crown relations. This will require skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism.*

Call to Action #92[18] also calls upon the corporate sector to adopt UNDRIP as a framework for reconciliation. This requires a proficiency in terminology and understanding. It is recommended that all staff obtain a base level of history and intercultural competency training.

4 Pre-Engagement Learning

4.1 Determine what community to engage

The Indigenous traditional territory of one community may overlap with other communities. Determining who to engage with and in what order can be challenging. This is especially true for projects that have the potential to impact one or more Indigenous communities.

Identification of communities with established or asserted Aboriginal rights or title may be required, and these include treaties, court decisions, litigation files, and existing treaty negotiation "statements of intent." The proximity of a communities to a project is not necessarily a good indicator of who to engage with because many communities practice rights-based activities in areas far from their home reserve. Many communities were moved from their original territories as *reserves* were created under the Indian Act and treaty agreements. It will be the responsibility of the Crown to determine whether the duty to consult is triggered. Appendix B has information and links to assist identifying communities with Aboriginal rights.

4.2 Pre-Engagement Learning Considerations

Learning about a community before you reach out to them shows respect, reduces the burden of engagement on the community, increases your ability to build trust, and improves the possibility of community involvement in the project. Before you engage with communities, consider the following:

- **History:** Are there experiences in the community's history that may influence their response to the project?
- **Plans:** What are the community's aspirations and future plans? What opportunities or challenges might your project introduce for the community? Not all Indigenous communities publicize their community plans, in which case you will learn this once you engage with them.
- **Protocols:** How can you show respect through your interactions? Learning about the community's culture is a sign of respect. This includes their protocols, which is the respectful way one interacts with Indigenous people according to their customs.
- **Timing:** Are there times of year where the community is engaged in practices like hunting, fishing, or berry-picking that may will impact their ability to participate in engagement? How does your project timeline align with plans and practices in the community?
- **Adequacy:** Have you done enough preparation and learning to reduce the burden placed on the community to teach outside engineers about their history and culture? This could result in choosing a trauma-informed engagement process.
- **Competency:** Consider external consultants who specialize in Indigenous engagement and relations as you and your organization acquire experience and develop you own practice policy or strategies. This can be particularly important where jurisdictions overlap, or projects may adversely impact communities.

What you learn should influence your engagement plan. How and when you engage will reflect what you learned about the community's values, aspirations, protocols, and previous project experiences. The pre-engagement learning may identify potential opportunities for the community's participation, not only in the engagement process, but also in the project delivery- in this situation, early engagement is critical.

Engagement Insights – Project Manager and Mechanical Engineer

In preparation for meetings and engagement with the community I look to inform myself on the community as well as the environment where the community exists. Some of the items I inform myself on include the climate, diet, wildlife, language, and sources of pride for the community.

4.3 Sources for pre-engagement learning

Sources for pre-engagement learning vary, but consistent ways to learn about a community include community websites, federal, provincial, and territorial databases, and through direct communications with the community.

Part of one's learning should be to prepare a land acknowledgement specific to the territory and community involved. Land acknowledgements can be a way to express one's gratitude for the original stewards of the land and should reflect the speaker's relationship to the land. Seek guidance on this process through resources or a workshop. The aim should be to avoid a gesture that is performative or insincere, and instead develop one that looks to authentically, meaningfully acknowledge the land, its people, and relationships to the land.

Appendix C has more information on what types of details the pre-engagement learning sources can provide and land acknowledgement links.

Engagement Insight – Communities Engineer

Usually, I try to find the local language so that I can incorporate a hello or thank you. I prepare a land acknowledgment and learn a bit about the territory, reserves, etc. using websites and First Nation Profiles on the Government of Canada website.

5 Principles of Respectful Engagement

Principles of respectful engagement apply to all types of projects and relationships between engineers, engineering firms, and Indigenous communities. Approaches will vary due to the scale of project, impacts on community, previous relationships, and individual goals and values of the community. Where appropriate, examples of approaches taken will be used to highlight engagement principles.

5.1 Build trust before projects

Trust is foundational to successful engagements and projects. Engagement is not a one-time conversation; it is a continuous process that builds trust and strengthens relationships.

Here are some ways to build trust over time:

- **Begin early and avoid rushing:** Building the relationship takes time. Many aspects of engagement rely on mutual trust that is best built over time. Trying to rush this process can erode trust. If possible, try to include time during community visits that are not strictly about advancing project business.
- **Spend time together**, ideally in the community. This is a more effective way to build the relationship than phone calls and emails.
- **Attend events:** Some community events are open to the public and attending can help you learn about the community's culture and values. To be invited to some ceremonies is a great honour and declining can be disrespectful. If you accept an invitation, ask about protocols so you can be prepared.
- **Observe protocols:** Take the time to learn and observe community protocols which includes gifts and ways of interacting with Elders. (See Section 5.5).
- **Be prepared to share:** Be prepared to share a bit about yourself. Many Indigenous cultures' introductions include details like your name, where you are from, and who your family is. For some communities this is a cultural protocol.
- **Eat together:** Sharing a meal with members of the community is a good way to let people get to know you and for you to meet people. Allocate the time for this and offer to provide the meal as a kind gesture.
- **Involve the community:** Seek ways to involve the community in the project in all ways that support their other goals. Viewing the community as a partner goes a long way to building trust.
- **Respect contributions:** Engagement that includes community contributions to design, beyond consulting services, demonstrates a commitment to learn from community members, Knowledge Keepers, or Elders.
- **Continuity:** Maintaining staff throughout a project is advisable because of the importance of personal relationships. If personnel need to change and new relationships need to be established, ensure that staff are informed on the work to date in order to respect the contributions of the community up to that point.

Engagement Insight – University Researcher

We always work based on the community's schedule and timeline. There were cases that took a few years for the project to get off the ground. While the project was a priority for the community, it was one priority among many (which sometimes were even more urgent). So, we never pushed the community to force them to follow our schedule. Rather, we went based on their timeline. This flexibility helped build trust with the community members/leadership and our team.

5.2 Engage early to maximize community involvement

Early engagement is critical to enabling participation by the community in the engagement process and project delivery. Seeking opportunities for community participation began in pre-engagement learning,

but during the engagement process, specific project roles and contributions beyond participating in the engagement process can be explored with the community that include but are not limited to:

- Contributing local professional services and Traditional Knowledge.
- Contributing to the engagement facilitation and project monitoring.
- Contracting or subcontracting components of the project.
- Providing skilled and general labour on the project.
- Providing project materials, supplies, and equipment.
- Providing local accommodations and catering.

Ensure there is a clear understanding of the community's capacity to fulfill these roles, along with contingency plans to ensure their success in the project delivery.

Not all communities have the in-house staff to review project documents or have existing capacity to contribute in the ways listed above. Developing the required capacity takes time and therefore engagement should occur as early as possible because opportunities and benefits can be lost if there is not sufficient time for a community to plan and prepare to participate.

Consider enabling on-the-job training, apprenticeship placements, and job shadowing opportunities that provide experience and employment to community members. These take time to establish with contractors, subcontractors, and members of the project team, but they are examples of providing benefits of projects beyond the engineering objectives themselves.

Engagement Insight – University Professor and Engineer

A balance needs to be struck between approaching early enough that the community has opportunity to influence project, but not so early that the project team has no direction, no capacity funding, and puts responsibility on the Nation to come up with solutions for the team.

5.3 Resource engagement to meet the project and community's needs

Begin by learning the community's desired level of engagement and capacity to participate. The engagement and overall project timelines may not match the community's capacity to contribute, even if they wish to. Keep this in mind as you establish preliminary project schedules and be prepared to accommodate or work with the community to find a balance between their capacity and the project objectives.

To estimate the timeframe needed for engagement, it helps to estimate:

- roughly how many community visits are needed.
- the time required to respond to inquires from both the community and from the design team.
- the time needed for the community to do any internal engagement and decision making.

Seek feedback on your developing engagement plan to ensure it aligns with the community's capacity and adjust the timeframe to accommodate. The timing and resource considerations are different depending on the project, the level of collaboration, and the role the engineer has with the Indigenous

community. Community initiated project RFPs may contain specific expectations for engagement while external proponents will need to determine the engagement timing and scope.

Engagement relies on establishing relationships. Therefore, as your network of contacts grows within a community and as you establish credibility and trust, the time needed to proceed through various stages of engagement can decrease with a community. The diversity of communities will always add uncertainty to estimating time and budget, but commonalities will emerge based on your experience.

Engagement Insight – Communities Engineer

Late engagement and having too many details ready does not allow for open, thoughtful conversation. We include a line item for engagement and assume a number of hours required, and let our clients (project owners, usually municipalities) know that this will have to be tracked and if more time is required then a project scope change request will be submitted.

5.4 Establish and maintain effective communication

Developing a consistent communication with one or more members of the community will be necessary. The community-assigned contact person or project liaison will be identified if you are responding to an RFP, but if your client is not the community, you can find the appropriate person several ways:

- The community website: most community websites provide contact information for various departments.
- Use the community's general telephone number or email address. When seeking information for the first time, a phone call may be the best approach until you have connected with the person responsible for receiving inquiries and requests for engagement.
- Ask colleagues who have connections in the community but recognize that this should not be delegated to Indigenous colleagues by default. Consider developing a policy that includes compensation if Indigenous colleagues will serve this role. Relationships are everything, and as you conduct projects with Indigenous communities you will find that networks exist between communities that will assist you in the future.

Maintain communications while staying flexible

Communication and trust are a pair. Communications are an important way to establish trust with your community partners. Effective methods to establish and maintaining consistency, transparency, and accountability are:

- **Adapt to preferences** in both the way to correspond and their frequency. Don't assume that emails are being read and follow up with a phone call. Some people may prefer the telephone – this is particularly true for some Elders.
- **Maintain records** as these can be part of other formal jurisdictional consultation requirements. Keep a log of meetings, phone calls, visits, and new contacts you make in community. For larger engagement programs it may be useful to use stakeholder management software to maintain a Record of Consultation.

- **Take notes** at meetings and share them with attendees. These should include action items and those assigned to tasks.
- **Record direction** given by community representatives and any commitments you make.
- **Be responsive** by following up on community questions.
- **Deliver on commitments** and if you cannot, be sure to explain why.
- **Be transparent** about your decision making/or your process
- **Designate someone** in your organization to handle regular communications. Having a consistent and accessible person for community representatives to contact will streamline communications both directions.
- **Maintain connection** after a project or between projects. Staying connected through periodic communications that doesn't necessarily refer to a project demonstrates a less-transactional mindset and a commitment to community beyond contractual limits.

Procurement documents may outline initial communication expectations, but this will evolve as the project progresses.

Engagement Insight – University Researcher

The engagement with any community is a process that goes for the entire life of the project and even after the project ends.

Crafted for the community

When planning engagement sessions or meeting with community representatives, consider who will be at the gathering and how best to communicate with them. The following considerations relate to many Indigenous communities and will impact your ability to communicate project details, connect on a human level, and show intercultural respect:

- **Communication effectiveness** includes more than what you say, but also the types of materials you share, the technical terminology you use, your body language, and how you present yourself.
- **Follow community protocols**. These include but are not limited to introductions and the order of speakers.
- **Use the community's preferred name**. Growing self-determination and the re-establishing of cultural protocols has also included some nations and communities adopting Indigenous names. Using outdated, Crown-assigned names is a sign of disrespect. An example resource is the British Columbia First Nations Pronunciation Guide.
- **Silence** can be important and does not necessarily signal agreement. Be patient and leave space for silence rather than filling it immediately.
- **Know your audience.** Be prepared with materials and methods that will be received by your audience. Examples include choosing between PowerPoint, handouts, visual aids, and oral presentations to communicate the project details. Match the terminology you use with your audience to ensure your message is understood.

- **Be prepared to pivot or adjust**. For example, be prepared for unexpected community attendance.

5.5 Observe community protocols to demonstrate respect

When working with Indigenous communities, observing protocols demonstrate respect for the community's culture and traditional ways of being. Protocols vary among Indigenous cultures and sometimes between communities of the same nation. Learning about a community's protocols may provide a challenge, as they are unlikely found listed online. Respectfully asking the community contact person is best. Some examples of Indigenous protocols you may encounter include:

- Land acknowledgements.
- Talking circles.
- Interacting with Elders or Knowledge Keepers.
- Feasts and gifting.
- Protocols specific to ceremonies such as smudges and pow wows.

Unfamiliarity with protocols can be intimidating, and mistakes may happen as one applies what they learn. View this as part of the learning journey, acknowledge your mistakes, and take forward what you learn.

Engagement Insight – University Researcher

We always ask the community to share their protocols with us, and in many cases, they have written and established protocols. Where there are not written protocols, we proceed based on the information and stories they share with us in our multiple introductory meetings and throughout the project.

There are important aspects of Indigenous cultures that engineers will likely encounter, and while it's important to avoid treating all Indigenous communities as being the same, the following are a few considerations to prepare for:

Community spirituality and values:

- Not all communities practice and observe Indigenous spirituality. For example, some communities are predominantly Christian while others follow Indigenous worldviews. It is best not to make assumptions.
- Communities may incorporate their cultural teachings and value systems into their governance, economic, and business practices. An example could be planning on a longer timeframe than industry because of consideration given to past and future generations. Longer timeframes might also be required for internal dialogue and engagement among the community.
- Community values might be at odds with project objectives. Recognizing the source of resistance or disagreement is an important part of engagement.
- Many communities have a connection to the land that differs from western worldviews which can view land as an object to own or control. For example, land and resources may not necessarily be viewed by communities as assets, but as relations. Intercultural competency will assist engineers in respectfully navigating differing world views that impact projects.

- When there is a death in the community, it is common for the band office, businesses, and schools close for the day or days to support community members. Remain flexible and respectful should this impact your engagement process. When intergenerational trauma contributes to a community member's death, this may be particularly sensitive for a community.

Traditional knowledge and Knowledge Keepers:

- There is no universal definition for Indigenous traditional knowledge because it varies between communities. However, unlike western notions of knowledge and intellectual property, Indigenous traditional knowledge is location specific, reflects the distinct cultures that passed it on from generation to generation, and remains in the control of Indigenous people.[v]
- Elders are recognized and esteemed members of communities who are keepers of traditional knowledge and are often included in community processes.
- Knowledge Keepers are not necessarily Elders, but also hold and care for traditional knowledge.
- Seek guidance from your community contact as to whether an engagement event or the process should include an Elder(s) or Knowledge Keeper(s), what their role will be, if there is a protocol for asking them to attend, and what an appropriate honorarium is for the event. For example, it is common for an Elder to open a gathering with a prayer or ceremony and for some communities an offering of tobacco is made along with an honorarium. Appendix C has links to helpful resources, including working with Elders.

Cultural appropriation, Indigenous languages, and use of Indigenous knowledge:

- As you incorporate aspects of a community's culture, be mindful of historic practices that take cultural artifacts or practices without permission or compensation. It is always safer to ask with sincerity and take the community's lead.
- Demonstrate respect by using a community's language. This can be an effective way to demonstrate one's respect and an effective way to communicate engagement outcomes and findings. While rare, this may be critical when working with Elders who speak English as a second language. If necessary, find out who in the community can assist your engagement team with translations.
- Be as specific as possible when referring to a community. For example, it is technically correct to refer to community members as "Indigenous," but it is best to use the community's preferred name.
- Community data, including traditional knowledge shared, is not the property of outside parties. Extractive practices have historically left communities with little influence on how their data and knowledge is used, shared, and profited from. See Appendix C for a link to an Indigenous data policy called the First Nations Principles of OCAP® (ownership, control, access, and possession).

[v] Article 31 of UNDRIP outlines Indigenous Peoples' right to maintain, control, and develop their cultural heritage, traditional knowledge, and traditional cultural expressions.

Engagement Insight – General Manager and Engineer

When meeting with Indigenous groups, a traditional prayer is said before we begin, a smudging ceremony is completed, and then introductions and the agenda begins. The same takes place for the construction start. These protocols are traditional by nature, however they make the project more meaningful and show how important it is to the community.

6 Creating an Engagement Plan

Effective pre-engagement learning will prepare you to begin creating your engagement plan. Developing an engagement plan will require taking what you've learned from pre-engagement learning, what you know about timing considerations, communication methods, and community protocols, and balancing that with what you learn from initial conversations with the community.

6.1 Key engagement plan components

The community-focused engagement plan can be drafted based on the preliminary engagement plan and from input from the community. Key engagement aspects to include are:

- Engagement objectives
- Preliminary considerations
- Resourcing engagement
- Engagement timeframe
- Community engagement participants
- Format of engagement based on objectives and community capacity
- Engagement outcomes and how to evaluate effectiveness of engagement

Establishing an engagement plan early in the project poses a challenge because the level of effort required to engage respectfully is not known with certainty at the outset. When responding to a community infrastructure RFP, the engineers will have to apply judgement to many of the key engagement aspects.

6.2 Engagement plan objectives

It is critical that you understand how the community's input will be incorporated into the project. Creating transparent expectations and following through will build trust. The following considerations relate to the level of influence the community will have and/or wants to have on the project:

- **Determine the level of influence the community will have**. Outside of legal obligations, this will depend on the type of project, engineering constraints such as codes and standards, the project timeline, the project budget, and the community's capacity and desire to participate. For example, very time sensitive projects may only include high-level community input compared to projects where the community expresses a desire to contribute more time and expertise, and thus have more influence.

- **Expected level of influence**. The International Association for Public Participation (IAP2) Spectrum of Public Participation[19] can help identify and communicate the level of influence community members and representatives will have as part of the engagement process. Expect to be held accountable for implementing community input at the level of influence established.
- **Maintain transparency during engagement**. Withholding information can come back to hurt your credibility and will erode trust you've built. Ensure you have communicated design details and have community approval prior to finalizing funding applications.

Engagement Insight- University Researcher

To me, a good engagement plan is nothing but to (i) allow time to build trust with the community through multiple meetings and talking circles with them, (ii) being flexible with time, the scope of the project, and the execution plan. While technical and engineering codes are very important, everything should be put in perspective when working with communities.

6.3 Preliminary engagement considerations

Your preliminary engagement plan is contingent on feedback from the community and will be influenced by the following questions, some of which you will have learned about in your pre-engagement learning and others from conversations with the community contact person:

- What communities to involve and are there overlapping traditional territories?
- Does the scope of the project change the number of communities to engage?
- What type of relationship does the engineer/firm and the community have, what is the type of project, and how do these influence the timing of engagement?
- Will the project impact the community in such a way to trigger the duty to consult?
- Who needs to be involved from the community: Chief and Council, hereditary leadership, and/or broader community members?
- Do government-to-government relationships influence any aspects of the engagement process?
- Is there a historical reason the community could be strongly supportive or resistant to consultation and engagement?
- Are there previous or ongoing projects that can impact a community's capacity to engage and participate in the project delivery?
- How can early engagement enable community participation in the delivery of the project?
- You already know who the contact person is in the community from pre-engagement preparation. Now ensure you're not missing other rights holders or interested parties. As examples, is there a form of traditional leadership, such as Hereditary leadership,[20] that should be invited to participate and are all clans or families appropriately represented?
- Are there community politics that could impact engagement participation?

- Is the preliminary project timeline appropriate?

Engagement Insight – University Researcher

We do not go to the community with any prior agenda or assumptions. The first trip and meeting are to listen and learn about their stories and concerns. It's only through multiple conversations and meetings that we can start building the necessary knowledge and understanding of the needs of the community and then define the project.

After initial introductions and after the project team has shared the objectives of the project, initial community feedback will influence the engagement plan. This is central to developing an engagement plan that is community-focused. Ask a lot of questions early through conversations or a survey to collect engagement preferences so the plan meets the project and community capacity and offers opportunities for the community to participate in the engagement and project delivery. The following are examples of what you should learn from initial meetings with the community:

- **Capacity and desire**. Establish how the community wants to engage. This may include who will represent the community from a leadership, technical, and cultural perspective. Keep in mind that apprehension or a lack of enthusiasm to participate can be due to, among other reasons, capacity, apathy or resistance to the project, or a mistrust based on previous unsatisfactory consultation and engagement processes.
- **Participation in project delivery.** In what ways can the community participate and benefit from project delivery. The capacity to participate may need to be developed to make this possible which requires lead time and resources to compensate community members.
- **Additional insights** that may influence the engagement process. These can be cultural, social, and political dynamics that can influence engagement timing, community involvement, and the inclusivity of the engagement process.

Engagement Insight – University Professor and Engineer

A successful engagement plan is a collaborative and living document. Coming up with an engagement plan before you get to know the community doesn't work. One of the ways to do this is to set up a meeting/series of meetings at the beginning of the project with key team members from company and Nation and come up with some general guiding principles, develop a document from that, and have Nation review and comment.

6.4 Resourcing engagement

As a first step, ensure your team has developed the appropriate competencies and have conducted pre-engagement learning. If you expect a depth of engagement that will require the interpretation of traditional knowledge or incorporate spiritual protocols, you may seek to bolster your team with a cultural advisor. Consider the following if seeking a cultural advisor:

- The advisor should have ties to the Indigenous community. This will help avoid harmful generalizations about Indigenous Peoples and maximize the specific expertise they bring.
- Cultural advisors bring specialized knowledge. They should be capable of interpreting or adding context to cultural information shared and incorporating more complex protocols.
- Cultural advisors may or may not be able to speak for a community, regardless of their relationship to the community or who commissions them to participate.

6.5 Engagement timing

Having a preliminary timeframe is helpful but be prepared to accommodate the community's capacity to participate, which as outlined in Section 5.2 can be associated with engagement timing. Participation can be providing input and feedback on the project, but it can also involve contributing to the project delivery. Often a community is well situated to provide needed services on a project. In this way, the project benefits go beyond the infrastructure itself but contribute economically.

Indigenous communities are like all other communities in that the diversity within represents different perspectives and ambitions. Keep this in mind as you design your engagement plan. In some cases, you may need to allocate time for the community to come to its own position on a project. This may or may not be facilitated by your organization but recognize this potential phase of engagement. It is worth noting community leadership and election cycles which can disrupt the engagement process. If relevant, prepare for this within your timeframe.

Engagement Insight – Project Manager and Engineer

We strive to meet with the community and stakeholders as early in the development of our designs as possible. When possible, meetings with the community will occur before pen hits paper so that the information gathered during community engagement can be foundational to the design.

In an ideal project, follow up community engagement will occur during the schematic alternative phase and again at the end of the schematic design phase. By front loading the community engagement, the needs of the community can be incorporated and used to guide the technical design and decisions.

We have found this early engagement process to be very beneficial to the project and reduces conflicts between technical design and incorporation of information from the community. It can also streamline the design, as the technical solutions are developed after the community information is collected, so it avoids the trap of trying to adapt the engineers' pre-conceived solution to the information gathered from the engagement.

6.6 Community engagement participants

Who you engage with will vary between projects and between communities. The type of project may necessitate specialized perspectives from the community, while the diversity among communities will influence who is included. Beyond the community contact person, other Rights Holders and stakeholders[vi] you may be instructed to invite into the engagement process include, but are not limited to:

- Broader community groups like Tribal Councils or treaty representatives
- Community leadership like the Chief and Band Council or hereditary leadership
- Administration such as Band Office Manager or Administrator
- Technical staff like infrastructure operators and maintainers
- Infrastructure end users and operators
- Indigenous Knowledge Keepers and/or Elders
- Community youth
- Volunteer organizations
- Other project stakeholders

Note that elected officials and community staff may be unable to participate on the proposed timeline. They are responsible for all community needs– not just your project.

6.7 Engagement Format

Engagement can take many forms and should match the desired engagement objectives, support the relationship building process, and foster intercultural learning. Materials and information should be shared in a way that is easily understood by the audience, in a format they prefer. In-person engagement is more effective for building relationships, but you may need to accommodate the community's capacity and ensure your team has the required engagement skills- bring in specialists if necessary. Examples of engagement formats include:

- Individuals going for coffee
- Group meetings or workshops
- Community open houses
- Site visits and walks
- Gatherings over on-line virtual platforms

It is always important to be flexible and meet the community where they are at. For example, during the COVID-19 pandemic, many communities-imposed restrictions on visitors which would require an adapted approach to relationship building and engagement. Understand and follow the community's lead with respect to cultural protocols and health and safety policies.

[vi] While engineering community engagement typically involves seeking input and feedback from *stakeholders*, be mindful that Indigenous engagement often involves seeking input from people with Aboriginal rights and title. *Rights holder* is a more appropriate term to use in this situation.

Engagement Insight – Project Manager and Engineer

As an example, when designing a new school, we will schedule interactive meetings with dedicated activities to receive information from administration, teachers & staff, parents, the school board, council, the community, and students for all grades. Each activity is designed to be interactive and facilitated by a member of the design team. By gathering information from different sources, it has allowed us to incorporate the needs of the users into the design of the schools.

6.8 Engagement outcomes and evaluation

The sharing of engagement summaries is important to maintaining transparency. Summaries or findings can be shared through a presentation or report, including:

- Main themes to emerge
- Methods used to facilitate discussion and collect input
- Who participated
- How it influenced the project
- Questions that required follow-up and the responses to the inquiries

Confirm with the community that you interpreted their input correctly and that you have a shared understanding. Ensure the findings are accessible to the appropriate people – this could require hard copies for people without internet access or computer skills.

Evaluating engagement as it takes place is critical to adapting to unexpected occurrences like lower or higher than expected participation, or unanticipated resistance to a project. It is possible that community input changes the engagement approach, and this requires flexibility.

Evaluation can also occur after the project is complete. Lessons learned should be reflected upon and incorporated into future training and engagement planning. Seeking feedback from engagement participants can offer different and valuable perspectives. This learning process leads to improved engagement best practices and demonstrates a willingness to respond to community input.

The engagement process for a specific project is best approached as part of the larger relationship building process that continues after the project is complete and should contain considerations on how to maintain communication with the community. This is fundamentally different than engagement practices that are transactional in nature and view projects as isolated and unrelated.

Engagement Insight – Project Manager and Engineer

One of the goals of community engagement is to establish a trusting relationship with the members of the community and to show that as the designer you are invested in implementing their vision.

6.9 Engagement collaboration

Input from infrastructure operators and maintainers can be critical to long-term design suitability and operation. Seek operator input and hear the feedback they offer. Make efforts to incorporate their first-hand experience to optimize project effectiveness.

During the engagement process, local traditional knowledge may contribute to a more holistic understanding of the project site conditions and/or the community's relationship to the proposed project location. This opportunity will only arise if Knowledge Keepers and/or Elders are invited to and supported in the engagement process. Differences may arise between community priorities and values and engineering design constraints. Identifying the difference between design preferences and engineering standards is important as the engineer seeks to find mutual understanding with community members and project managers. It is much more likely that design constraints can be communicated, and alternatives explored if there is a trusting relationship between engineers and community members.

Engagement Insight – Project Manager and Engineer

Prior to establishing the plan, we will reach out and solicit information from the Community as to who should be consulted on the project. Frequent suggestions that we receive include Elders, council/local government, maintenance staff, and building users.

7 Conclusion

Relationships are at the core of respectful Indigenous consultation and engagement. This guideline aspires to prepare engineers and engineering firms for this task through individual and organizational preparation, pre-engagement learning, important engagement principles and considerations, and engagement planning.

The development of this guideline has involved a relationship building process between the engineering profession and Indigenous communities that forms the foundation for the engagement principles outlined within. As the relationship develops, so too will engagement practices. This guideline will evolve as a living document through continued sharing and learning. The guideline user is encouraged to identify the difference between their legal obligations and their professional ethical responsibilities to conduct their work in the best interests of the communities above client or personal interests.

Additional resources and references are contained in the appendices, including a glossary of Indigenous consultation and engagement terms (Appendix A), duty to consult and federal, provincial, and territorial

consultation and engagement frameworks (Appendix B), and learning, helpful, and pre-engagement resources (Appendix C), and reference citations (Appendix D).

8 Acknowledgements

This guideline is the result of input from many generous and passionate participants from all over what is now called Canada. Elder Norman Meade of Manigotagan, Manitoba was in attendance for all engagement gatherings leading to the drafting of the guideline and his contributions connected his Métis culture with the engineering and engagement principles being discussed. A sincere thank you to everyone involved.

Appendix A: Glossary

accommodation[21]: Balancing Aboriginal and Crown interests by avoiding or minimizing identified adverse effects on Treaty or Aboriginal rights. Accommodation can include putting conditions on project approvals, requiring project proponents to modify project proposal, delaying approval decision or denying project approval.

allyship[22]: The act of working towards dismantling oppressive spaces by educating others on the realities faced by marginalized groups.

band or Indian band[23]: These terms refer to the governing unit of some First Nation communities instituted by the Indian Act, 1876. *Bands*, as defined by the Indian Act, use common lands for which the legal title is vested in Her Majesty, have funds held for it by the federal government, and are declared a band by the Governor in Council for the purposes of the Indian Act. Not all First Nations use these terms and may use *First Nation* or *Nation* instead. It is always best to confirm.

the Crown[24]: A symbol that represent the state and its government. With respect to Indigenous consultation and engagement in Canada, the Crown is the provincial, territorial, or federal governments, whom have a fiduciary duty to safeguard the interests of Indigenous Peoples.

Colonialism[25]: The domination of a people by a foreign state. It involves political and economic subjugation by the controlling actor.

Comprehensive community plan (CCP)[26]: The community's vision for their future which can set short, medium, and long-term goals as well as their roadmap to achieve them. CCPs typically provide information on community values, governance structure, land and resources, infrastructure development, social structure, education, health and their economy.

Cultural advisor[27]: A recognized member of the community who holds traditional knowledge and specializes is working with organizations to interpret and apply traditional knowledge.

decolonization[28]: The un-doing or unsettling of colonial power structures and restoring Indigenous practices and ways of being.

Elder[29]: The term "Elder" does not simply refer to elderly people in a community, but the respectful acknowledgement of their role in the community. They are recognized by the community as holders of traditional knowledge, cultural practices and wisdom. Therefore, their input is often sought on community projects, programming, and community decisions.

free, prior, and informed consent (FPIC)[30]: The rights of Indigenous Peoples to participate in decisions that impact their lands and resources. In the context of consultation and engagement, the Crown commits to obtaining FPIC before projects are approved.

Indian Act[31]: Originally passed in 1876, the Indian Act is a federal law that governs matters relating to Indian status, bands, and Indian reserves. This paternalistic piece of legislation authorizes the federal government to regulate and administer the daily affairs of registered Indians and reserve communities.

Indigenization[32]: The act of recognizing the validity of Indigenous worldviews and knowledge and identifying opportunities to express indigeneity.

Indigenous vs. Aboriginal vs. Indian[33]: There has been an evolution of the terminology used to refer to Indigenous people in what is now Canada. The term "Indian" should only be used within legal contexts associated only to First Nations people with Indian status under the Indian Act. Of currently used terms, this one should be avoided due to it's link to colonial policies. The term "Aboriginal" was and is still used in legal and constitutional contexts. The term "Indigenous" refers collectively or individually to First Nations, Metis, and Inuit. It is the preferred term when one cannot use the specific name of a community or nation.

intercultural competence[34]: The understanding of what an intercultural society is and how to effectively communicate and work with people of other cultures.

Knowledge Keeper[35]: An Indigenous community member who holds and cares for traditional knowledge and teachings that have been passed down by an Elder or senior Knowledge Keeper in their community.

land code[36]: A comprehensive law created by a First Nation that replaces some Indian Act sections that relate to land management.

pan-Indianism and Pan-Indigenize: Assuming all Indigenous groups share spiritual beliefs and have common histories and aspirations.

positionality[37]: This refers to social and political contexts that shape your identity, which influences your outlook and worldview. For engineering consultants this would include understanding how a number of factors influence their degree of privilege and how bias can impact their professional practice.

privilege: The social, economic, and political advantages or rights given to dominant groups of people based on their gender, race, sexual orientation, social class, physical abilities etc. Privilege includes unearned social power granted to members of a dominant group by formal and informal institutions.

proponent: The organization proposing a project for review and approval that can include but is not limited to industry, Indigenous governments, municipalities, and private entities and individuals.

protocol[38]: The way one interacts with Indigenous people that respects and observes their traditional ways of being and ethic systems. Protocols vary between Indigenous cultures and even between communities.

settler fragility[39]: The difficulty or inability to talk about one's unearned privilege of living on and benefiting from the on-going displacement of Indigenous people from their territories and the effects of settler colonialism.

stakeholder vs. rights holder: Stakeholders are any party with an interest in a project. Indigenous people are rights holders because of distinct Aboriginal rights contained in section 35 of the Constitution Act, 1982.

trauma-informed engagement: A process of engaging with people who have experienced trauma that recognizes trauma symptoms and acknowledges the impact trauma has had on participants.

treaty[40]: Treaties are agreements between Indigenous groups, the Government of Canada, and often provinces and territories that define the ongoing rights and obligations of all parties. There are historic treaties signed between 1701 and 1923 and modern treaties which began in 1975.

unceded land[41]: Lands that First Nations people never surrendered or legally signed away to the Crown or Government of Canada.

white fragility[42]**:** According to Robin DiAngelo, white fragility "is a state in which even a minimum amount of racial stress becomes intolerable, triggering a range of defensive moves. These moves include the outward display of emotions such as anger, fear, and guilt, and behaviors such as argumentation, silence, and leaving the stress-inducing situation. These behaviors, in turn, function to reinstate white racial equilibrium."

white saviour complex[43]**:** When a white person attempts to help non-white people because only they can save others from their situation. Despite sincerely intentions, this serves their own needs and contributes to the false narrative that BIPOC people are powerless.

worldview[44]**:** One's comprehensive conception or apprehension of the world is from a specific standpoint. This is frequently informed by cultural, societal, spiritual, experiential, and other factors. In the context of indigenous engagement, recognizing one's own worldview and respecting others' worldviews is foundational to mutual understanding, effective communicating, and intercultural collaboration.

Appendix B: Duty to Consult and Consultation Protocols

Duty to Consult

The Government of Canada has a duty to consult, and accommodate when appropriate, Indigenous Peoples when projects could impact established or asserted Aboriginal or treaty rights. The duty lies with the Crown, although portions of the process can be delegated to project proponents.

The consultation and accommodation should balance Aboriginal interests with other societal interests, relationships and positive outcomes for all partners. The consultation process should be:

- carried out in a timely, efficient and responsive manner
- transparent and predictable
- accessible, reasonable, flexible and fair
- founded in the principles of good faith, respect and reciprocal responsibility
- respectful of the uniqueness of First Nation, Métis and Inuit communities
- includes accommodation where appropriate

The Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) Aboriginal and Treaty Rights Information System (ATRIS) is a web-based information system that maps Indigenous communities and displays information pertaining to their potential or established Aboriginal or treaty rights. This is helpful when identifying communities that could be affected by a proposed project. The Consultation and Information Service (CIS) at CIRNAC provides information about the location and nature of established or asserted Aboriginal and Treaty rights to federal officials and other interested parties.

Existing Federal, Provincial and Territorial Consultation Protocols

CIRNAC supports federal departments and agencies in upholding the Government of Canada's duty to consult. This involves providing guidelines, training, and other tools. There are some established

consultation protocols between Indigenous groups and provincial and territorial governments that facilitate engagement, promote relationship building, and clarify the roles of and responsibilities of the parties involved. For more information on the duty to consult including guidelines and existing provincial and territorial consultation protocols, refer to the CIRNAC website.

Other examples of consultation and engagement resources:

- Indigenous consultations in Alberta
- Consulting with First Nations (British Columbia)
- Duty to consult with Aboriginal peoples in Ontario
- Government of Saskatchewan Proponent Handbook

Appendix C: Learning Resources

The following learning formats and resources offer guideline users a place to start their personal learning and ways to engage their organizations in the learning process.

Learning Formats:

- Personal introductory learning. Options include self-guided learning, online resources like massive open online courses (MOOCs), and in-person or online facilitated courses.
- Intercultural competency training specific to your team's needs. This can include but is not limited to concepts of empathy, justice, decolonization, Indigenization, trauma-informed engagement practices, and Indigenous ways of knowing and being.
- Indigenous cultural awareness training that includes terminology, misconceptions and stereotypes of Indigenous people, exposure to Indigenous social and political structures, Indigenous legal orders, and the impacts of policies like the Indian Act and UNDRIP.
- Community mandated cultural training for consultants working in their territories.
- Individual and organizational learning can be normalized institutionally as part of Indigenous history month or part of National Day of Truth and Reconciliation
    - reading lists and book clubs
    - bring in guest speakers who can contextualize Indigenous experience
    - leveraging existing relationships to collaborate beyond engineering projects
- Regulator mandated continuing education for engineering registrants. Professional development opportunities are offered by various provincial and territorial regulators.

Examples of individual learning resources:

Books on Indigenous-Canada history, politics, and engagement

- *21 Things You May Not Know About the Indian Act* by Bob Joseph
- *Unsettling Canada: A National Wake-up Call* by Arthur Manuel and Grand Chief Ronald M. Derrickson
- *Weaving Two Worlds: Economic Reconciliation Between Indigenous Peoples and the Resource Sector* by Christy Smith and Michael McPhie

- *Indigenous Writes: A Guide to First Nations, Metis & Inuit Issues In Canada* by Chelsea Vowel
- *My Conversations with Canadians* by Lee Maracle
- *Indigenomics: Taking a Seat at the Economic Table* by Caron Anne Hilton
- *Standoff: Why Reconciliation Fails Indigenous People and How to Fix It* by Bruce McIvor

The Royal Alberta Museum has an excellent repository of resources including reading lists, films and documentaries, radio and podcasts, Indigenous language apps, and other online resources.

University of Alberta Indigenous Canada MOOC is a 12-lesson online course that explores the history and contemporary perspectives of Indigenous Peoples living in Canada, from an Indigenous perspective.

The following are pivotal public works of investigation, engagement, truth telling, and healing. They have influenced much of the building and rebuilding of relationships between Canada and Indigenous peoples.

- Royal Commission on Aboriginal Peoples: Report
- Truth and Reconciliation Commission's Calls to Action and various reports
- Missing and Murdered Indigenous Women and Girls Calls for Justice
- United Nations Declaration on the Rights of Indigenous Peoples

Example group learning courses:

- Four Winds & Associates training
- Indigenous Corporate Training Inc. training
- Four Seasons of Reconciliation Education
- KAIROS Blanket Exercise
- Manitoba Environmental Industries Association (MEIA) offers an Aboriginal Cultural Awareness and Engagement Workshop

Regulator-specific training resources:

- Truth and Reconciliation mandatory regulatory module from Engineers and Geoscientists BC (EGBC)

Helpful resources

Working With Elders by First Peoples Cultural Council

International Association for Public Participation (IAP2) Spectrum of Public Participation

Queen's University Terminology Guide

Native Land Digital is an interactive, web-based map demonstrating Indigenous territories, languages, and treaties. This website provides an accessible entry point for people interested in learning about territories based on locations. Similarly, Whose Land is a web-based map and learning resource.

FPIC resource: The University of British Columbia Indian Residential School History and Dialogue Centre has a discussion series on implementing UNDRIP. Article 3 refers specifically to Operationalizing FPIC.

Indigenous data governance

Principles of respectful data governance can be obtained through the First Nations Information Governance Centre's web-based course: the First Nations Principles of OCAP® (Ownership, Control, Access, and Possession).

Land acknowledgments

Many intercultural workshops are available specifically on land acknowledgements or are part of larger Indigenous competency training. Seek out a workshop in your region or find resources online like this from the University of Toronto.

Pre-Engagement Learning Resources

The intended outcome of your pre-engagement learning is to inform your engagement strategy on community details relevant to the project. The sources will provide varied results, depending on the community and the type of project. This preparation reduces the burden placed on the community or communities, but where gaps exist after this desk-top study, seek input from the community on further sources of information and specific details. influence your engagement plan and

The following are examples of learning resources and details they can provide:

Sources of Learning	**Available Information**
Inquire with colleagues	Previous projects with the community may produce valuable insights into future projects and/or inform you on who in the community to connect with Colleagues or your Indigenous relations team can be helpful in this respect
Community websites	Information on past or current projects, treaty processes, or ongoing litigation Engagement protocols or contact information for protocol inquiries. In many communities this is called the *Referrals Process* Comprehensive community plans provide the community's vision for their future including economic development plans, land use plans, environmental management plans, physical development plans, and many others
Federal government databases	Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) website has links to maps, community profiles, data and interactive tools relating to First Nations, Inuit and Metis people, treaties, and lands
Direct inquiries with the community	Where questions are left unanswered from the above approaches and you do not have a local contact, inquire with the community about further sources of information

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[41] Wilson and Hodgson, *Pulling Together: Foundations Guide*.

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[43] Robart, “Impact Over Intent.”

[44] Merriam-Webster.com Dictionary, “Definition of WORLDVIEW.”

BRIEFING NOTE: For decision

Feasibility study on alternative methods of academic assessment for non-CEAB applicants	4.2b
Purpose:	To approve the Feasibility study on alternative methods of academic assessment for non-CEAB applicants
Link to the Strategic Plan / Purposes:	Core purpose 3: Providing services and tools that enable the assessment of engineering qualifications, foster excellence in engineering practice and regulation, and facilitate mobility of practitioners within Canada.
Link to Corporate Risk Profile:	Insufficient representation of marginalized groups in engineering (Board risk) Diminished national collaboration (Board risk) Client satisfaction (Operational risk)
Motion(s) to consider:	THAT the Board, on the recommendation of the CEQB, approve the Feasibility study on alternative methods of academic assessment for non-CEAB applicants.
Vote required to pass:	Simple majority
Transparency:	Open session
Prepared by:	Ryan Melsom, Manager, Qualifications and CEQB Secretary
Presented by:	Margaret Anne Hodges, CEQB Chair

Problem/issue definition

- Canada's engineering regulators have expressed a need for greater clarity on the defensibility of methods used for assessing the academic credentials of applicants for licensure who have not attained their education through either a CEAB-accredited or CEAB-recognized program ("non-CEAB applicants").
- Recent court cases have illustrated the importance of ensuring that methods to assess applicants are transparent, objective, impartial, and fair, because of the potentially life-changing nature of the assessment. To mitigate risks associated with assessment, the CEQB was asked by the Board in 2021 to undertake a feasibility study on a national academic exam.
- During initial consultations several regulators noted that they have already developed jurisdictional systems for academic assessment and requested that the scope of the project be expanded to include these and other potential methods of academic assessment.
- CEQB created the Task Force on Alternative Methods of Academic Assessments for non-CEAB Applicants to undertake the study.
- The Feasibility study contributes to Strategic Priority 1.2: Strengthen collaboration and harmonization and provides context for work being done under Strategic Priority 1.1 Investigate and validate the purpose and scope of accreditation.

Proposed action/recommendation

- That the Board, on the recommendation of the CEQB, approve the *Feasibility study on alternative methods of academic assessment for non-CEAB applicants* for regulator use.
- The Feasibility study will be published on the members-only section of the Engineers Canada website and may be used by regulators to further facilitate conversations internally and among jurisdictions.
- The study is only intended as an analysis of options and does not constitute a recommendation or implementation plan; the decision to implement specific methods rests with the regulators (including their stakeholders in academic assessment), who have sole authority and responsibility in this area.

Risks

- No risks were identified.

Financial implications

- N/A

Benefits

- CEQB products represent consensus-based, collaborative national perspectives on key topics affecting the profession and its regulation.
- The Feasibility study has the potential to improve the national consistency of academic assessment for non-CEAB applicants, resulting in a reduction of legal risks to regulators and better protection of the public.
- It is intended as a resource to inform regulators when they are making decisions on academic assessment practices both at the jurisdictional and national levels.
- It outlines several methods and options that engineering regulators in Canada may wish to consider adopting to enhance assessment of non-CEAB applicants, and implications associated with such methods.
- The Feasibility study's findings represent the synthesis of an environmental scan of 12 engineering and non-engineering national organizations, one-to-one interviews whose participants included Quebec's fairness commissioner, a series of three national workshops, a summit of three of the top Canadian psychometricians, and a targeted literature review.

Consultation

- At the request of the National Admissions Officials Group, a CEQB Task Force on Alternative Methods of Academic Assessments for non-CEAB Applicants was created, consisting of four CEQB members, one representative from the CEAB, and four regulator representatives with expertise in academic assessment. This group was tasked with undertaking a feasibility study in consultation with the Canadian Engineering Accreditation Board (CEAB) and the regulators.
- In 2021, a consulting firm was engaged to deliver an environmental scan, and facilitate a national workshop (attended by 37 regulator and CEQB participants). Data collected was subsequently used to develop a draft general direction, which was sent for regulator consultation in fall 2021. Three regulators, two CEAB members, and the National Admissions Officials Group provided input that guided the study's development.
- The Feasibility study was approved by the CEQB for regulator and CEAB consultation in the fall of 2022.
    - Given that the study was intended to serve as a springboard for regulator discussions around methods of academic assessment, it was determined, in consultation with NAOG, that the most appropriate format for consultation would be to host a regulator discussion of the study's findings. To accomplish this, the CEQB hosted a debrief summit, which was attended by 10 NAOG members.
- Twelve members of the CEAB also provided feedback during a separate virtual consultation session. The outcomes of their discussions were summarized and appended to the study.
- The outcomes of both the NAOG and CEAB discussions were summarized and appended to the study.

Next steps (if motion approved)

- The Feasibility study on alternative methods of academic assessment for non-CEAB applicants will be published in the Members Area of the website (log-in required).

Appendices

- **Appendix 1:** Feasibility study on alternative methods of academic assessment for non CEAB-applicants

Feasibility study on alternative methods of academic assessment for non-CEAB applicants

submitted by

Canadian Engineering Qualifications Board

May 26, 2023

FEASIBILITY STUDY: METHODS OF ACADEMIC ASSESSMENT FOR NON-CEAB APPLICANTS FOR LICENSURE

PREPARED FOR: ENGINEERS CANADA

SUBMITTED BY: KEITH JOHNSON & GIEDRE JOHNSON

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Overview

In April 2021, consultants Keith Johnson and Giedre Johnson were retained by Engineers Canada to develop a feasibility study exploring methods of academic assessment for potential engineering licensees who did not obtain their education through an accredited Canadian engineering program. Those include internationally educated individuals who graduated from Washington Accord programs and non-Washington Accord[1] programs as well as those from domestic non-accredited programs (for the purposes of this report this group is referred to as "non-CEAB applicants", where CEAB stands for the Canadian Engineering Accreditation Board).

Primary and secondary research, achieved through an Environmental Scan and Literature Review, as well as internal consultations realized through a National Workshop, provided an in-depth understanding of the variety of potential assessment methods that could be employed by engineering regulators. The research conducted supports the findings of this report – a Feasibility Study that describes these options and outlines the implications associated with their use.

The Feasibility Study is divided into four parts. The first section describes the research methodology employed. The second summarizes findings related to a targeted literature review and an environmental scan. In the third section, an analysis of existing assessment stages of non-CEAB applicants is provided. The report concludes with a discussion of future options for multi-jurisdictional collaboration and coordination in the assessment of academic credentials. Each of the options is presented with an accompanying risk analysis using the SWOT framework (Strengths, Weaknesses, Opportunities and Threats), and in the case of possible future options, a high-level implementation plan for each.

Part 1: Methodology

A total of 12 organizations were researched as part of the environmental scan for the purpose of identifying existing and emerging practices in the area of international credential assessment. As illustrated in the table below, a combination of domestic engineering regulators and international engineering regulators /associations as well as domestic non-engineering regulators were explored. A combination of primary and secondary research was employed, which included a review of website information,

[1] Engineers Canada. The Washington Accord. See: https://engineerscanada.ca/accreditation/the-washington-accord

salient documentation, and interviews/correspondence with key informants at each of the organizations. In addition, one Fairness Commissioner and a group of psychometricians were interviewed. Organizations, reviewed as part of the environmental scan, were selected with the guidance and support provided by the Canadian Engineering Qualifications Board (CEQB) Task Force[2].

Domestic Engineering
• British Columbia – Engineers and Geoscientists British Columbia • Manitoba – Engineers Geoscientists Manitoba • Quebec – Ordre des ingénieurs du Québec
International Engineering
• Australia – Engineers Australia • Europe – European Federation of National Associations Engineers • United States – National Council of Examiners for Engineering and Surveying
Domestic non-Engineering
• Architecture – Canadian Architectural Certification Board • Physiotherapy – The Canadian Alliance of Physiotherapy Regulators
Fairness Commissioners
• Quebec – Commissaire à l'admission aux professions
Psychometricians - Focus Group (Post Environmental Scan)
• Wickett Measurement • Meazure Inc. • Spire Psychometrics
Credentialing and Assessment Agency (Post Environmental Scan)
• Canadian Alliance of Physiotherapy Regulators

In addition, consultants administered a series of three (3) online focus groups (in lieu of a single National Workshop) which included members of the CEQB, CEAB, and engineering education program admissions officials. The primary purposes of the sessions were two-fold: 1) to reflect on the Environmental Scan findings, and 2) to share experiences and views on the assessment of non-CEAB applicants. Sessions were two (2) hours in length with 9-14 participants in each. An online survey was

[2] A task force of the CEQB – the "Task Force on Alternative Methods of Academic Assessment for non-CEAB Applicants" – was struck to provide guidance and oversight to the project. Members include: Amy Hsiao (Chair), Anil Gupta (CEQB), Frank Collins (CEQB), Nadia Lehoux (CEQB), Jason Ong (EGBC), Kalina Bacher-Rene (OIQ), Kate MacLachlan (APEGS), Kyle Marcotte (APEGA), Raymond Gosine (CEAB).

administered in advance of the sessions to gain baseline opinions regarding current practices and to engage in discussions on where, what, or if changes to current practices are needed.

Findings from both the Environmental Scan and the National Workshop were summarized in the General Direction document and presented to the CEQB Task Force for feedback. This document was intended to clarify the purpose, structure, and content of the final report.

In December 2022, two additional workshops were administered with the National Admission Officials Group (NAOG) and CEAB members to discuss implications and opportunities described in this report. An addendum was inserted to this document to reflect key themes and discussion points that emerged from these consultations.

Part 2: Key Findings from the Research Phase

Note, that the options presented later in this report are guided by primary and secondary research completed at the outset of the project. Key high-level findings from the Environmental Scan[3], National Workshop sessions and consultations, are summarized below and cited where relevant.

Existing practices revealed as part of the Environmental Scan

The primary goal of the Environmental Scan was to look both inwardly and outwardly to identify existing and emerging practices in the area of international credential assessment in engineering and non-engineering professions. The findings summarized below are not solely reflective of the assessment practices currently used by domestic engineering regulators but are drawn from a variety of regulators responsible for the assessment and admission of internationally educated applicants.

Several salient themes, emerged as part of the environmental scan, can inform refinements to the way(s) non-CEAB applicants are assessed by Engineers Canada's Regulators:

- **Balance between formal academic learning and work experience.** In most cases, regulators and associations consider on-the-job learning alongside the formal academic education required for licensure. The extent to which this is

[3] For detailed research findings, please see: K. Johnson & G. Johnson, "Environmental Scan: Methods of Academic Assessment of Non-CEAB Applicants for Licensure" Engineers Canada (2021).

permitted varies, with some regulators restricting the number or type of academic deficiencies that can be addressed in this fashion. As with all the themes cited below, there is an ongoing balance that regulators aim to achieve between the objectivity and reliability of the assessment process and the flexibility afforded to applicants.

- Confirming knowledge and remediating gaps. Several alternatives are provided to applicants, depending on the number and scope of gaps identified relative to entry-to-practice standards. These include exams, interviews, portfolio review and/or additional coursework. Some organizations are prescriptive as to the specific remediation required to address a given deficiency; others allow for more applicant discretion in this regard.

- Mid-career applicants. A large percentage of internationally educated individuals applying for licensure have substantial (5+ years), after-graduation work experience attained abroad. Yet, nearly all professions/jurisdictions assess these individuals against the same entry-to-practice standards as a new graduate. Typically, the longer time an individual spends in practice (in any discipline) the more specialized their work becomes. As a result, knowledge of other areas of practice may begin to atrophy. This career trajectory applies to all successful practitioners – from novice to expert. Regulators encourage this progression through continuing professional development requirements. The question (as it pertains in this context) is: is it better from a public safety and fairness perspective to assess mid-career applicants at entry-level academic requirements or against a different standard based on milestones expected of an experienced practitioner?

- Assessment of the institution versus the individual. Many professions including engineering make use of general research to support licensure decisions. These may include Mutual Recognition Agreements (MRAs), precedent files and/or other lists of accepted/approved educational institutions. This type of research can help to expedite the assessment process and enhance transparency by "automating" certain licensure decisions. However, some argue that the appropriate locus of assessment needs to be at the individual level – hence institutional research benefits from complementary data and/or confirmation by gathering and assessing information specific to the applicant.

- Commentary from a "Fairness" perspective. Fairness Offices/Commissioners have been established in five provinces: Ontario, Quebec, Manitoba, Nova

Scotia, and Alberta (coming soon in Saskatchewan). Fairness legislation across the country is philosophically similar, requiring assessments to be objective, transparent, impartial and fair. In the context of this project, a guiding principle to achieve fairness when assessing qualifications is the use of methods which are both necessary and sufficient. In an interview, the Commissaire à l'admission aux professions du Quebec noted that the regulatory philosophy and approach of engineering in Canada is well-thought-out from a risk-management perspective. In addition to academic requirements, individuals may be required to complete a period of supervised practice to confirm possession of key workplace competencies. Given this multi-modal system, regulators are asked to consider the added value of fully confirmed and remediated academic equivalency for internationally educated applicants.

Relevant literature/legislation and implications

Certain laws, guidelines and best practices associated with the assessment and recognition of international credentials are germane when considering alternative methods of evaluating engineering applicants. Key documents and salient points in relation to the context of this work have been highlighted. A brief description of each, and associated implications, are set out below.

The Canadian Free Trade Agreement

Chapter 7 of the *Agreement on Internal Trade* (now titled *The Canadian Free Trade Agreement, 2017 (CFTA)*[4]) states that recognition of foreign qualifications in one jurisdiction must be recognized by other jurisdictions:

> *Any worker certified for an occupation by a regulatory authority of a Party shall, upon application, be certified for that occupation by each other Party that regulates that occupation without any requirement for any material additional training, experience, examinations, or assessments as part of that certification procedure (Chapter 7, Article 705, paragraph 1).*

The CFTA fundamentally amounts to a mutual recognition agreement between provinces. This "permit-on-permit" form of inter-jurisdictional reciprocity necessitates that regulators within a given profession use similar standards and mechanisms to determine whether an applicant seeking licensure is ready to practice. While it is solely

[4] Canadian Free Trade Agreement. Canadian Free Trade Agreement. See: https://www.cfta-alec.ca

the responsibility of the local authority to set licensure requirements and register applicants (i.e., provincial/territorial regulator), it is in the best interest of all to harmonize these approaches across Canada. A consistent and shared set of standards and comparable assessment methodologies can help all regulators to be confident in the readiness and competence of engineers regardless of where they are initially licensed. They are also less confusing and frustrating for internationally educated applicants.

The Lisbon Convention

The "Lisbon Convention" has been signed by most European countries, agreed to by all of Canada's provincial governments, and ratified by the Federal Government (June 13, 2018). This document (entitled "Convention on the Recognition of Qualifications concerning Higher Education in the European Region"[5]) applies to regulators as its purpose is to ensure that holders of qualifications issued in one country shall have adequate access to an academic credential assessment of these qualifications in another country. The Convention provides that an assessment must be completed in a reasonable time period, be conducted fairly and transparently, and be specified beforehand. It also provides that a decision to deny registration must be demonstrable by the body conducting the assessment.

Two secondary documents, "General Guiding Principles for Good Practice in the Assessment of Foreign Credentials"[6] by CICIC and "Recommendation on Criteria and Procedures for the Assessment of Foreign Qualifications"[7] issued by UNESCO and the Council of Europe in 2001 to help guide Lisbon signatories to reach full compliance. These documents provide guidelines and quality assurance frameworks for the fair, timely and consistent evaluation of international credentials. A number of key parameters are described, including: processing times, fees, translation requirements, documentation and appeals process. When developing an assessment framework which includes international applicants seeking licensure in Canada, regulators would benefit from considering the force and effect of these documents and their own policies and decision-making.

[5] UNESCO/Council of Europe (1997). "Convention on the Recognition of Qualifications concerning Higher Education in the European Region".
[6] Canadian Information Centre for International Credentials (1998). "General Guiding Principles for Good Practice in the Assessment of Foreign Credentials".
[7] UNESCO/Council of Europe (1991). "Recommendation on Criteria and Procedures for the Assessment of Foreign Qualifications".

Methods of Academic Assessment for Non-CEAB Applicants

Section 7 of the Convention requires that provision be made for those individuals who are legitimately unable to obtain academic documentation. It states:

> *Each Party shall take all feasible and reasonable steps within the framework of its education system and in conformity with its constitutional, legal, and regulatory provisions to develop procedures designed to assess fairly and expeditiously whether refugees, displaced persons and persons in a refugee-like situation fulfil the relevant requirements for access to higher education, to further higher education programmes or to employment activities, even in cases in which the qualifications obtained in one of the Parties cannot be proven through documentary evidence.*

Fairness Legislation

Perhaps the most significant development for regulatory colleges related to international credential recognition in the past 15 years has been the introduction of fairness legislation. As mentioned earlier, fairness offices/commissioners have been established in some form in five provinces: Ontario, Quebec, Manitoba, Nova Scotia and Alberta – highlighting the importance of fair labour market treatment of all new Canadians as a public policy priority. These offices provide advice and guidance to regulatory authorities. Principles outlined in their guiding legislation are based largely on the Lisbon Convention.

Fairness legislation across the country is philosophically similar. The assessments and outcomes associated with regulatory decisions need to be Objective, Transparent, Impartial and Fair. Some jurisdictions require annual or bi-annual audits/reports from regulators. Others provide resources to regulators on improving their processes and highlighting exemplary practices. The Ontario Office of the Fairness Commissioner defines three types of fairness that need to be considered when assessing individuals for the purpose of licensure[8].

- Substantive fairness: ensuring the fairness of the decision itself. The decision itself must be fair and meet pre-determined and defensible criteria. The decision must be reasonable and the reasoning behind the decision must be understandable to the people affected.
- Procedural fairness: ensuring the fairness of the decision-making process. There is a structure in place to ensure that fairness is embedded in the steps to be

[8] Office of Fairness Commissioner. Office of Fairness Commissioner. See: www.fairnesscommissioner.ca/

followed before, during and after decisions are made. This structure ensures that the process is timely and that individuals have equal opportunity to participate in the registration process and demonstrate their ability to practise.

- Relational fairness: ensuring that people are treated fairly during the decision-making process by considering and addressing their perception about the process and decision.

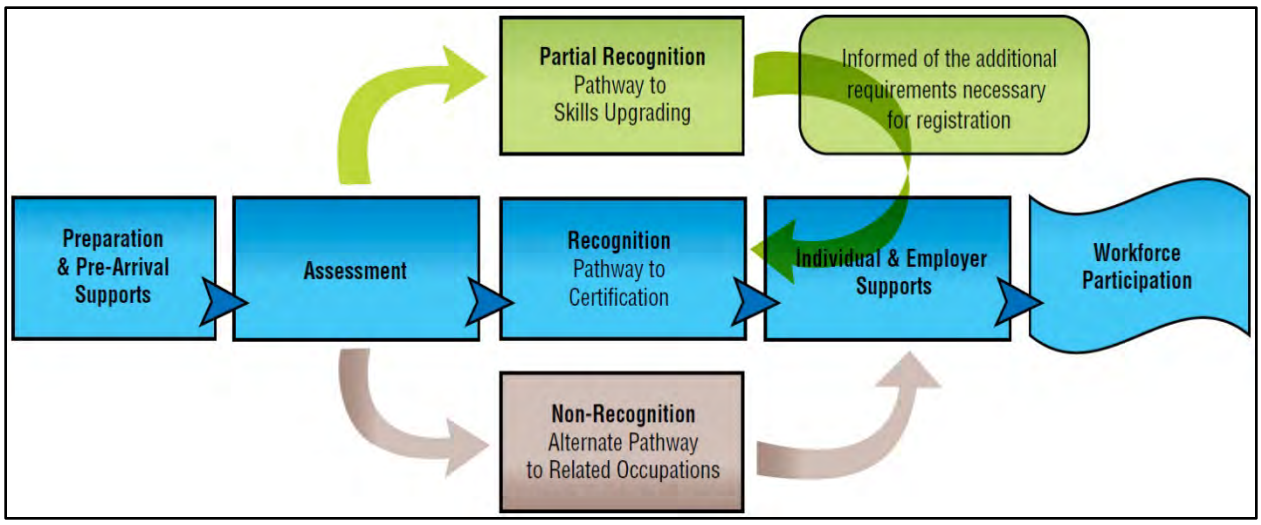
In the context of this project, a guiding principle to achieve fairness when assessing qualifications is the use of methods which are both necessary and sufficient. This ensures that only the qualified applicants have their educational credentials deemed substantially equivalent. Methods which are unnecessary and insufficient will affect timeliness and cost to the organization and to the applicant (this will result in an applicant proceeding (and paying) for future steps when they may be ultimately unsuccessful or incompetent to practice at entry-level). Considering an applicant's work and other educational experiences when assessing competency will provide a more well-rounded assessment.

Pan-Canadian Framework for the Assessment and Recognition of Foreign Qualifications

In 2009, the Forum of Labour Market Ministers (FLMM) released "A Pan-Canadian Framework for the Assessment and Recognition of Foreign Qualifications" (the" Framework"). The Framework lays out expectations and recommendations for those groups (i.e., professional regulatory bodies) responsible for the recognition of foreign credentials in Canada. As defined by the FLMM "foreign qualification recognition is the process of verifying that the knowledge, skills, work experience and education obtained in another country is comparable to the standards established for Canadian professionals and tradespersons."

Figure 1 – Pathways to Recognition in Canada (FLMM, 2009)

Methods of Academic Assessment for Non-CEAB Applicants



The Framework "describes the ideal steps and processes that governments aspire to build in order to address the current gaps to successful immigrant labour market integration"[9]. The associated "Pathways to Recognition in Canada" also includes a list of "benchmarks of success" for each component of the assessment and recognition process. Although not legally-binding, these benchmarks represent general Canadian fairness expectations. Mirroring these expectations in regulatory outcomes and embedding them into internal processes is now considered best practice and many regulators who fail to do so are called out by Fairness Commissioners.

The report also echoes the language of fairness legislation calling on those responsible for recognising international credentials to do so in a fair, transparent, consistent, and timely manner. This final parameter is given greater specificity: with the stated goal that, "an individual will know whether their qualifications will be recognized or be informed of the additional requirements necessary for registration or be directed toward related occupations commensurate with their skills and experience".

The Framework serves to highlight a key discussion point among engineering regulators: What is the scope of international credential recognition in the context of this analysis? More specifically, when looking to implement alternative approaches regarding credential recognition, where does the responsibility of the regulator start and end? Is the provision of pre-arrival supports in-scope? Are bridging programs

[9] Forum of Labour Market Minsters (2009), "A Pan-Canadian Framework for the Assessment and Recognition of Foreign Qualifications". See: https://www.canada.ca/en/employment-social-development/programs/foreign-credential-recognition/funding-framework.html?=undefined&wbdisable=true

and/or alternative career planning of regulatory concerns? Opinions on these topics were explored as part of the National Workshop.

In 2014, the FLMM released an update to the original report. Among other key messages, an emphasis on improved pre-arrival support for prospective applicants is encouraged. Allowing for immigrants to begin the assessment process while still overseas is regarded as essential, with the report stating:

> *An internationally trained individual, destined to Canada, will be able to apply to an appropriate regulatory authority, or designate, prior to arriving in Canada and receive a timely response regarding initial assessment, and be informed of additional requirements for registration*[10].

Separate reports regarding the status[11] and promising practices[12] in the field of pre-arrival supports were commissioned by the FLMM and serve to inform the approaches and options described later in this report.

More recently, the FLMM has released a new resource for regulated professions on improving the utility and clarity of their websites. Effective communication with applicants is essential for all regulators. Good, clear and timely information is beneficial for the regulator and applicant alike as it can serve to expedite the licensure process and reduce the number of inquiries fielded by regulatory staff. To this end, the FLMM has developed a detailed checklist for regulators to audit and refine their website[13]. Sections include organization, comprehensiveness, clarity, visual design, accessibility, and functionality. Each section includes a series of tips aimed at helping regulators maximize the utility of their website.

A Way Forward for Refugees

In the past decade, Canada has seen the greatest influx of refugees since the Second World War. Between November 2015 and February 2016, the Canadian government

[10] Forum of Labour Market Minsters (2014), "An Action Plan for Better Qualifications Recognition". See: https://flmm-fmmt.ca/wp-content/uploads/2021/08/An-Action-Plan-for-Better-Foreign-Qualifications-Recognition.pdf
[11] B. Baumal, K. Johnson (2014) "On the Current State of Pre-Arrival Supports among Canadian Regulators". Prepared for the Best Practices and Thematic Task Team. See: https://flmm-fmmt.ca/wp-content/uploads/2021/08/Appendix-D-On-the-Current-State-of-Pre-Arrival-Supports.pdf
[12] B. Baumal, K. Johnson (2016), "Improving Pre-Arrival Information Uptake for Internationally Educated Professionals". FLMM. See: https://flmm-fmmt.ca/wp-content/uploads/2021/08/aa01fe_3a4408b9b0814ed4938a389c2ae37538.pdf
[13] Forum of Labour Market Minsters. "A Guide for Regulatory Authorities: Best Practice Checklist of Website Content for Internationally Trained Individuals". See: https://flmm-fmmt.ca/wp-content/uploads/2021/08/Appendix-A-Best-Practice-Checklist-of-Website-Content.pdf

settled more than 26,000 Syrians who had fled to Lebanon, Jordan and Turkey – by June 2017 that figure had increased to 47,000[14]. The recent conflict in Ukraine resulted in an additional 182,528[15] refugees admitted between March 17 and August 3, 2022 (during the same period, a total of 455,854 applications were received). There are several reasons, such as war, fires, institutional destruction policies or persecution that make it challenging or impossible for many newcomers to Canada (not only refugees) to source original documents from their academic institutions. Arriving in Canada without access to proof of their education, such individuals have difficulty moving forward with their careers and fully utilizing their education, skills, and experience. Fairness legislation requires that regulators offer an evaluation mechanism for these individuals. Historically, a number of approaches have been used including sworn affidavits that are verified with research and/or interviews to determine academic and professional qualifications.

In 2016, World Education Services (WES) launched a pilot project aimed at creating best practices for assessing refugees and others without original documentation[16]. Over 200 applicants participated in the pilot with over 70% having completed post-secondary education. WES issued a compendium document based on the findings of the pilot project titled, "Recognizing Refugee Qualifications: Practical Tips for Credential Assessment"[17]. The document includes practical considerations when attempting to piece together information with limited academic documentation. The report suggests other sources of evidence that may that be used to help corroborate an applicant's background, such as:

- Diplomas and certificates of completion
- Student ID cards
- Published lists of students
- Proof of tuition payment
- Proof of admittance to state examinations
- Professional licenses or certificates
- Statements of professional standing/status (from a regulatory body)
- Membership cards for professional associations

[14] UNHCR. Figures at Glance. See: https://www.unhcr.org/en-us/figures-at-a-glance.%20html
[15] Government of Canada. Ukraine Immigration Measures: Key Figures. See: https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/ukraine-measures/key-figures.html
[16] World Education Services (2018), "A Way Forward for Refugees: Findings from the WES Pilot Project".
[17] World Education Services (2016), "Recognizing Refugee Qualifications: Practical Tips for Credential Assessment"

The WES report also offers guidance on the content of a sworn affidavit. Sworn statements/affidavits should include:

- The applicant's circumstances and a detailed explanation about why they could not obtain official documents from the home institution(s)
- Names of all secondary and tertiary institutions attended
- To the extent possible, detailed information about these institutions, especially tertiary institutions, including location, type of institution, and accreditation status
- Names and descriptions of all courses taken (as can be remembered without transcripts)
- Dates of graduation
- Awards received and actual or approximate dates of receipt
- Information about the applicant's professional background, including licensure/certification information (with dates), and a summary of work history in the field

The report details many other aspects that can assist in regulatory policy decisions and procedures, including recommendations regarding the use of exams, interviews, work samples and competency assessments.

Facilitating the Integration of Convention Refugees

Similar, profession-specific work has been carried out by Engineers Canada in this regard. In a resource titled, "Facilitating the Integration of Convention Refugees[18]" several accommodations are proposed. These include guidelines for regulators based on many of the formative documents described above (Lisbon Convention, Fairness legislation, etc.). Select, examples are provided below.

- *Staff training and sensitivity* – Promote cultural sensitivity and awareness among those involved in the assessment process.
- *Receipt of contextual information* – Regulators are encouraged to seek out and interpret all available relevant information, including an "understanding of the circumstances of the individual applicant" when making a licensure decision.
- *Alternatives to generally requested forms of identification* – Regulators should recognize that refugees may not be able to obtain all typically required

[18] Engineers Canada (2016). Facilitating the Integration of Convention Refugees. See: https://engineerscanada.ca/facilitating-the-integration-of-convention-refugees

documentation related to personal identification. Flexibility is encouraged in this regard.

- *Alternatives to original education documents* – Similarly, educational documents may be difficult to source. Regulators are encouraged to consider sworn affidavits, photocopies, and documents provided by the applicant themselves in these situations.
- *Use of prior learning assessment and recognition (PLAR)* – In the case where academic credentials cannot be sourced, PLAR tools and assessment should be made available to the applicant as a means of assessing their professional competence. These may include "demonstrations, structured interviews, simulations and portfolios".
- *Alternative forms of verification of work experience* - regulators may with to consider unofficial documents supporting the nature and duration of work experience or sworn statements from reliable sources.

In addition, engineering regulators are encouraged to provide refugee applicants with help translating official documents, providing reduced or waived application fees, and facilitate mentorship opportunities.

Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants

Engineers Canada has provided policy guidance in its document, "Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants" that can benefit engineering regulators[19]. Much of the progressive philosophies and approaches described in fairness and labour mobility reports (and detailed above) have been embedded in this document. It serves to outline the important and delicate balance that exists between assessment flexibility and maintenance of public safety. The Engineers Canada guidelines are structured around six general principles:

1) Assessment processes must be individualized
2) Assessment processes must be fair
3) Education documents must be authenticated and verified
4) Assessment of breadth and depth of education (of the program and institution) should be partly quantitative and partly qualitative

[19] Engineers Canada (2018), "Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants".

5) Confirmation of breadth and depth of education is a requirement for all applicants
6) Flexibility should be allowed between breadth and depth, as long as a minimum threshold is met

These principles can anchor potential alternative assessment methods explored in the final section of this report.

Themes/views from National Workshop participants

Several themes emerged from the National Workshop sessions and subsequent consultations. Note, that these represent the viewpoints shared by participants only. In some cases, opinions are contradictory or are outside of the scope of this specific project but have been summarized below to illustrate the range of feedback received:

1. Coordinate efforts on the academic assessment of non-CEAB applicants.
   There is a general appetite to more closely coordinate assessment methodologies nationally as a means of promoting consistent outcomes. A number of suggestions were offered in this regard:
   - Share expertise and resources amongst regulators. Significant variation exists in the resources available to regulators (e.g., staffing, technology, in-house expertise). Individual provincial regulators can take advantage of expertise/tools/resources from other jurisdictions, especially if they exist only in one or two jurisdictions. Sharing multiple assessment tools could lead to greater processing efficiency and provide consistent assessment outcomes across Canada.
   - Use of third-party assessment agencies to authenticate and verify academic documents. Outsourcing document verification and authentication to third-party agencies (e.g., WES, ICAS) may reduce regulators' workload and enhance the objectivity and credibility of the overall assessment process. Note that a detailed review of course content is beyond the scope of these agencies and is best performed internally by engineering regulators.
2. Assessment of depth and breadth of academic background.
   Participants noted that an overarching philosophy of the assessment process is to manage risk by seeking out evidence that provides confidence to regulators

regarding an applicant's ability to practice safety. Views around how to effectively and defensibly measure the depth and breadth of an applicant's academic background -- a key indicator in this regard -- were discussed.

- Current assessment practices. Participants discussed some of the benefits and limitations that may exist with the current assessment practices used by most regulators:
  - Use of precedent files can expedite assessments and promote consistency of outcomes.
  - Interviews can be useful to better understand an applicant's engineering knowledge and experience. However, there is a risk of subjectivity with decisions and interpretations made by a small group of interviewers.
  - Technical exams and Fundamentals Engineering (FE) exam are not exclusively designed to measure the breadth and depth of an applicant's academic knowledge but are useful for gap-filling/remediation and/or confirmation purposes.
  - Peer assessment is generally the preferred approach to candidate assessment; qualified engineers should have a hand in assessing all applicants, although issues of bias and subjectivity need to be taken into consideration.
  - Longitudinal research on the outcomes associated with low-risk groups can help to streamline the process for certain non-CEAB applicants.

3. Reflections on a Canadian entry-to-practice exam.

Workshop participants offered varied options on the utility and feasibility of introducing an entry-to-practice exam in Canada. Discussion points are summarized below.

- Could be very resource-intensive to develop and maintain
- Need psychometric expertise to better determine the feasibility and utility of a made-in-Canada exam
- May be useful as a confirmation tool but then perhaps the US FE suffices
- Exam performance may not reflect true competence for mature internationally educated applicants
- National exam may have fairness implications if applied to non-CEAB applicants only
- Challenging to develop an exam for all existing and emerging disciplines

- Some felt that a Canadian exam may undermine the CEAB's ability to maintain accreditation for Canadian programs as they would begin 'teaching to the exam'. Conversely, others felt that the introduction of an exam would have no negative effect on learning outcomes.

4. Assessment of mid-career applicants.
   It was generally agreed that an individual with 5-7 or more years of engineering practice after graduation may need to be assessed differently than a recent graduate. If the purpose of the assessment is to ensure that applicants are competent and safe to practice, then what proportion does the academic knowledge versus practical experience and continuous professional development play in the overall competency of the applicant?

5. The importance of appreciating international engineering education.
   Assumptions that the Canadian engineering degree is "better" than other engineering degrees were discussed amongst the workshop participants.

   - Washington Accord and MRAs give regulators confidence in the quality of the educational program but it is still necessary to assess the individual. Cannot entirely rely on institutional research.
   - A general bias may exist where CEAB accredited degrees are considered as the gold standard; there are other engineering degrees (internationally) that are of comparable quality.

6. Development of a full-spectrum Competency Profile.
   Participants were generally open to the idea of developing an entry-to-practice Competency Profile that covers both academic learning and work experience requirements.
   - A true competency-based assessment may be more defensible and transparent and give higher confidence that applicants are evaluated based on a common entry-to-practice standard.
   - Would allow for more flexibility and innovative approaches when assessing non-CEAB applicants.

7. Anticipate changes and plan for the future.
   Participants highlighted that society, practice and technology are rapidly evolving and that it is essential that assessment methodologies are in-step with those changes.

- There is an increase in the emerging disciplines that may be difficult to appropriately assess using current practices.
- Current practices and standards allow for flexibility; however, there might be a need to generate new approaches for evaluation of applicants with distance learning and micro-credentials.
- Most current evaluation practices focus on technical skills while real-world challenges by practising engineers tend to arise in the non-technical (soft) skills. Current assessment practices have not been modified to reflect this change.

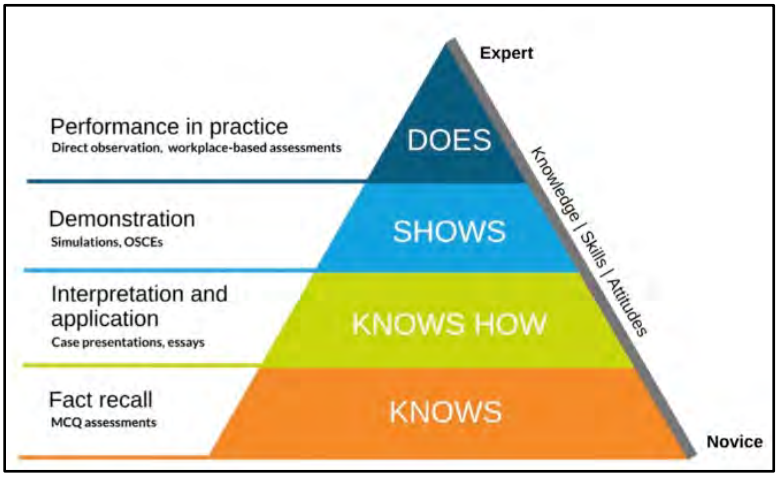
Part 3: Feasibility Study – Methods of Assessment for Non-CEAB Applicants

The research conducted and the options proffered as part of this feasibility study, focus on the assessment and recognition of academic learning. Proof of formal engineering education, that approximates the breadth and depth of CEAB accredited programs, is a regulatory requirement to becoming registered as an Engineer-in-Training (EIT). While some non-CEAB applicants may be able to apply directly as a Professional Engineer (P.Eng.) designation immediately, others are required to complete the EIT program first. After initial registration, an EIT typically undergoes a period of four years of supervised practice before an P.Eng. designation is granted by the local regulator. While the period of supervision and associated licensing decisions are beyond the scope of this analysis, the full life cycle of the regulatory context is relevant in determining the appropriateness of options presented.

Regulation is about collecting and identifying evidence to increase objective confidence, that a given applicant will be a safe, ethical and will practice according to their competence. In a world of limited resources and imperfect information, regulators must rely on the best possible tools to assess individuals before granting a license. The concept of "right touch" regulation is based on the premise that regulators need to balance efforts and minimize risk without subjecting the applicants to unnecessary barriers.

The entire assessment and licensure process must be robust, but that does not mean that every step in the process needs to be extensive to be effective. Rather, regulators can rely on the power of a multimodal approach to assessment, where the totality of numerous assessment steps strengthens confidence and decreases risk. Miller's

Pyramid in instructive in this regard. As shown in the diagram below, different forms of assessment are able to assess different areas and levels of expertise. An extensive period of supervised practice tied to specific work experience competencies is incredibly powerful from a regulatory perspective; it is an opportunity to truly see what someone "does".



Given the rigour and length of the supervisory component, as well as a growing consensus in the assessment industry that direct observation over time is the most accurate and most powerful assessment tool,[20] it is possible that other requirements for those associated with the assessment of academic learning might be revisited. Other assessment components can safely be modified to ensure that they are as efficient, streamlined, and fair as possible.

In the following section, a number of assessment options are outlined. These were selected with the input from the Task Force and include existing tools currently available to engineering regulators, and those that could be implemented collaboratively in the future. Each consists of a general description, background information and a risk analysis using the SWOT framework (Strengths, Weaknesses, Opportunities, Threats).

The first set of options titled "Stages of the Engineering Assessment Process", are those that engineering regulators currently use or could potentially implement individually. The second set, "Future Options for Assessment", are those that necessitate inter-jurisdictional cooperation to realize the greatest possible benefit. For the latter category, an implementation plan is provided to allow for an appreciation of the likely activities, timing and resources involved. In all cases, regulatory bodies are presented with a set of core questions when considering modifications to existing requirements:

1. What is the regulatory problem that needs to be solved?

[20] Association of Test Publishers (ATP) Annual Innovations in Testing Conference. Orlando, Florida. February 2019.

2. Will the option being considered provide greater confidence in the applicant's ability to practice competently, safely and ethically than what is being done currently?
3. Will the option expedite or streamline the assessment process?
4. Does the option constitute an unnecessary barrier to applicants?
5. What and/or will the implemented option have on labour mobility?
6. Can the Regulator or group of Regulators access the necessary resources and expertise to successfully develop, implement and sustain the option?

Stages of the Engineering Assessment Process

Based on the research conducted as part of the Environmental Scan, Literature Review and feedback gathered at the National Workshop, an analysis on the utility and efficacy of assessment methods is provided. This section explores a series of options for assessing academic credentials of applicants for licensure who have not attained their education through either a CEAB-accredited program.

Stage 1: Proof of Academic Credentials

Use of third-party assessment agencies

The assessment of an applicant's post-secondary academic education begins with authentication and verification of the credentials. Some engineering regulators complete this review internally, while others outsource it to a third-party agency – WES[21].

WES (along with other assessment agencies) has been designated by Immigration, Refugees and Citizenship Canada (IRCC) to provide Educational Credential Assessments (ECAs) to Canadian academic institutions, licensing bodies, employers and individuals seeking academic credential evaluation. WES offers document-by-document, course-by-course and Educational Credential Assessment evaluations, document verification and authentication, online document storage and other services.

Jurisdictions, that outsource credential evaluations to WES, require applicants to have either the document-by-document or the course-by-course evaluations. The WES evaluation process (for both types of evaluation) includes a review of information

[21] Other quality third-party assessment agencies (recognized by Federal and Provincial governments) operate in Canada. They offer services similar to WES. See: https://canalliance.org/en/

about the institution and program completed by the applicant, and comparison to the equivalent Canadian education. The key difference between the two is that the course-by-course report also lists all subjects with their corresponding credits, grades and a calculated GPA expressed in Canadian terms. The WES course-by-course report can be compared to the syllabi of an appropriate engineering discipline/ specialization by the regulator when assessing applicant's academic credentials. Courses that are missing, there is limited exposure to, or not have not been successfully completed as per the WES report can then be identified as potential gaps that require remediation.

Outsourcing a portion of the academic assessment to a third-party agency has many benefits. A transparent, impartial and fair review of documents conducted by an arm's length specialized agency offers defensibility and substantive fairness in the decision-making. Also, time spent reviewing each document for verification and authentication purposes, as well as following up with applicants, can be allocated to other tasks. Lastly, regulators can have confidence that every applicant's document was verified by a reputable agency to be true and authentic copies.

However, there are limitations to the process, and it is important to also consider the limitations of using the comparison method to identify gaps in the non-CEAB applicant's education.:

- Comparing a WES report to the syllabi may identify gaps in the applicant's coursework, not necessarily gaps in their knowledge. This may be even more true in the case of mature applicants have obtained significant knowledge through practice, continuing education and/or other avenues of learning.
- WES assesses the equivalency of the program to the Canadian education system, not the quality of the institution or the depth and breadth of the academic program.
- The engineering profession and its education is constantly evolving; as a result, mature, specialized applicants will always have gaps in their academic assessment, regardless of their professional achievements.

SWOT Analysis – Third-Party Assessment Agencies	
Strengths	• Having a reputable third-party agency verifying and authenticating documents mitigates risks and promotes external confidence and impartiality regarding the decisions being made.

Methods of Academic Assessment for Non-CEAB Applicants

	• Reduces regulators' workload, improves efficiency and streamlines the process. • Enhances objectivity, transparency, consistency and defensibility of the assessment process.
Weaknesses	• A detailed review of course content is best completed internally by regulatory bodies with experienced engineering assessors. • Identifying gaps in applicant's coursework by comparing WES report to the syllabi might not accurately assess applicant's knowledge. • Additional costs to the applicant may serve as a barrier.
Opportunities	• A common approach to verifying/authenticating documents across all regulators will facilitate labour mobility and is responsive to applicants' needs (i.e., high customer-service rating). • Using other federally approved ECA providers[22] (i.e., ICES, IQAS, ICAS & CES) is also possible, as some applicants may already have their credentials verified and authenticated for immigration purposes.
Threats	• Inconsistent outcomes if only some regulators rely on third-party agency reports to identify gaps • Evaluation of applicant's education does not provide a complete picture of their skills, knowledge and abilities • Document by document or course-by-course assessments tells what applicants were taught, not necessarily what they learned.

Stage 2: Assessment of Education

Mutual Recognition Agreements (MRAs) and other articulation agreements

Engineers Canada has negotiated multiple international agreements to facilitate and expedite credential recognition and international mobility for Canadians wanting to work abroad and for those wishing to practice in Canada. Mutual Recognition Agreements (MRAs) are intended to recognize licensed engineers with an equivalent

level of licensure, and others – to expedite the review of applicant's academic credentials.

International agreements are signed among organizations that accredit academic degree programs. They recognize the substantial equivalency of accreditation systems of participating countries and that they have comparable academic processes, standards and outcomes. The graduates of these programs are assumed to have the skills, knowledge and competency to practice safely in a professional environment at an entry level. Engineers Canada negotiate the agreements nationally, but each jurisdiction interprets the content of the MRA individually and processes applicants based on local policies and processes.

While accreditation assesses the system of education, it does not evaluate on an individual level. It's up to an individual regulator to recognize or not recognize applicant's credentials, regardless the origin of their education. Currently, most regulators make use of international agreements but still conduct a thorough assessment and a course-by-course review to confirm applicant's education. The licensure application begins the same as for those applying with non-CEAB credentials: submission and assessment of transcripts, syllabi, WES ICAP report, course-by-course review and other. Based on the outcomes of the assessment, applicants are exempt (typically if the program found to be acceptable, if it is Washington Accord program or if there are additional postgraduate credentials) or prescribed confirmatory exams, or prescribed examinations for the purpose of correcting a perceived academic deficiency.

While the workload to review applicant's education is not reduced or expedited, regulators regard MRA degrees as comparable to the Canadian education and therefore valuable in confirming the educational pedigree of an applicant. The institutional research conducted as part of the MRA development process gives regulators enhanced confidence in applicant's education and defensibility in licensure decisions.

SWOT Analysis – MRAs and Other Articulation Agreements	
Strengths	• International agreements give regulators confidence in quality of education and defensibility in licensure decisions.
Weaknesses	• Cannot entirely rely on research of education system to make licensure decisions - need to assess applicants individually as well. • Does not expedite the assessment process as regulators still do credential assessment and a course-by-course review - same as for non-CEAB-applicants.
Opportunities	• Can serve as a basis for an alternative licensure route from certain source countries -reduce regulator's workload and to expedite the assessment process.
Threats	• Need to continually monitor major changes in MRA countries to ensure that educational systems remain similar.

Precedent files and internal lists of institutions

Many regulators make use of a system of precedent files when assessing internationally educated applications. This method is based on the principles drawn from Common Law where assessments are informed by previous decisions involving comparable criteria (program and years of study, issuing institution, year of graduation, etc.). This approach has the benefit of increasing consistency among assessment decisions – applicants with similar academic pedigrees receive similar assessment results.

However, the effectiveness of the precedent file system is directly proportional to the size of the library and the protocols developed to access relevant information in an efficient way. A greater number of assessments processed for a given program yields ever-increasing confidence in the outcome that has been conferred. Data contributes to defensibility in that the breadth and depth of education, afforded by a given program, has been sufficiently documented for assessors to make a defensible determination on its comparability in Canadian terms. A large repository can also reduce reliance on outside agencies to verify documents. Staff and assessors can access the library to compare signatures, seals and other security markers to confirm and authenticate the academic documents submitted (e.g., diplomas, transcripts).

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In many cases, P.Eng. volunteers are involved in reviewing and assessing files from non-CEAB applicants. While the peer-review model is often cited as the gold standard in professional regulation, certain issues can arise - an innate yet natural bias to review education based on way "you were taught". The use of precedent files can help mitigate this type of subjectivity.

Findings based on precedent should be subject to ongoing review. The initial decision made regarding a given program is not necessarily the best or most correct one. Further, programs change over time, sometimes substantively so. While the strength of the system is premised on consistency, additional information gathered should be considered to inform future decisions. Even if the decision differs from the original one, educational programs should be reviewed anew every five years or so to document the existence (or not) of new content or educational approaches.

As mentioned in the final section of this report, precedent files and associated decisions can potentially be shared among jurisdictions. Over time, this can help to affect national parity regarding the assessment outcomes (e.g., number and type of assigned exams) for individuals with similar academic backgrounds and potentially expedite the entire process.

Finally, like many of the options presented, the best a credential assessment can hope to achieve is to gauge what an applicant might have been taught, not necessarily what they learned or can do. Regulators can gain a certain level of confidence in an individual's engineering knowledge by reviewing the quality of their educational institution/program, but confirmatory evidence, that is individual-specific, is needed to ensure a well-rounded evaluation.

The strengths, weaknesses, opportunities and threats of using precedent files are summarized in the table below.

SWOT Analysis – Precedent Files	
Strengths	• Can expedite/automate aspects of the assessment process. • Ensures that individuals from similar academic backgrounds are treated equally. • Lends transparency and consistency to the assessment process. • Can improve the objectivity of individual assessments – i.e., individual assessors are guided by previous decisions.
Weaknesses	• Future decisions are based on previous ones – difficult to justify a different outcome for an applicant with the same academic pedigree even when new information is gathered. • Can take a fair amount of time to build a sufficient large library of files. • Assesses the institution/program, not necessarily the individual.
Opportunities	• Information on programs and assessment outcomes can be shared between jurisdictions to promote pan-Canadian consistency - enhancing the IIDD to include not just program details but also assessment outcomes • In-house document libraries and staff expertise can reduce reliance on outside agencies for authentication/ verification purposes.
Threats	• Need to make sure files and decisions can be readily accessed and reviewed for the full utility of the system to be realized.

Stage 3: Prescribed Remediation and Confirmation

Structured interviews

Structured interviews are an assessment tool aimed at confirming an applicant's knowledge of a specific area. In some situations, they can be used in lieu of exams where findings of the paper-based credential evaluation are inconclusive in some areas. Based on the most recent National Reference Point data, approximately half of engineering regulators have implemented interviews for this purpose (i.e., "looking for breadth and depth to demonstrate knowledge").

Structured interviews are generally assembled in one of two ways. Either they can consist of a standard set of questions tied to the gap in question, or they can be portfolio-based, where the applicant is asked to present certain aspects of projects they have been involved with in the past. This type of tool typically relies on the interviewee drawing from relevant work experience and is therefore only suitable for use with mature applicants. Where possible, interviews are conducted by a panel (3-5 individuals) of P.Eng.'s with experience in the same discipline as the applicant.

Psychometric oversight and input into the construction of the structured interview process is essential. With outcomes reliant on the collective opinion of a small group of individuals, efforts to reduce the subjectivity are essential. A detailed scoring rubric with specific performance indicators should be developed to improve the defensibility of decisions. As part of the assessment, the applicant should be provided with information on evaluation criteria/standard in advance of the interview. Interviewers must be trained on how to conduct the interview and rate applicants in a consistent, unbiased way. A large pool of qualified practicing engineers that are able to volunteer their time can be challenging to maintain. Inter-rater reliability studies should be conducted periodically to improve the objectivity of the process. As explored later in this report (see *Assessment of Mid-Career Applicants*), structured interviews should be tied directly to specific academic learning outcomes and/or professional competencies. Longitudinal data can also be collected to streamline the assessment process for groups empirically deemed to be low risk.

SWOT Analysis – Structured Interviews	
Strengths	• A flexible and potentially streamlined way for mature applicants to demonstrate relevant academic knowledge gained through experience. • Peer-review focus – P.Eng.'s directly involved in the assessment process.
Weaknesses	• Can be expensive if face-to-face meetings are required – i.e., travel expenses for panel interviewers. • Only useful for confirming knowledge – not remediating gaps. • Can be perceived as being subjective – high-stakes determinations made by a small group of individuals.
Opportunities	• Can serve to expedite the assessment and admission process for mature applicants. • Can be tied to a full-spectrum competency profile – transparent and defensible. • A single approach can be adopted nationally to foster consistency of outcomes.
Threats	• Needs to be psychometrically constructed, reviewed and revised to ensure objectivity. • Need to maintain a roster of trained P.Eng assessors in a variety of disciplines. • Possibility of backlogs or slow turnaround times owing to ongoing availability of qualified assessors.

Use of CEQB examination syllabi

Engineers Canada has developed a set of discipline-specific syllabi as a resource for engineering regulators in the assessment of non-CEAB education and the assignment of remedial or confirmatory requirements[23]. The syllabi are based on the content offered in accredited engineering programs in Canada and are divided into three categories:

[23] Engineers Canada. Examination Syllabi. See: https://engineerscanada.ca/become-an-engineer/examination-syllabi

- Basic studies - foundational math and science topics, common to most disciplines
- Complementary studies: safety, economics, sustainability and engineering management topics, common accredited programs
- Discipline-Specific content

A total of 21 discipline-specific syllabi have been developed. Each includes a list of subjects/topics (with descriptions and references) that should be covered. Widespread use of the syllabi (i.e., among multiple jurisdictions) helps to promote consistency in credential assessment and remediation when exams or coursework are assigned. It also provides applicants with a clear understanding of the coursework they require to be considered substantially equivalent to a graduate from an accredited program. The engineering profession has changed significantly in the past two decades and the growing number of emerging disciplines can pose a challenge to assessors. Ongoing refinements are required to ensure that the syllabi are reflective of current education.

Additional research, conducted after the Environmental Scan, speaks directly to the benefits and limitations associated with comparing educational documents to a national curriculum standard[24]. While the engineering profession is unique in that there are 21 distinct disciplines and cannot be directly compared to another profession, the purpose of this research is to outline possible limitations using syllabi and course-by-course review to assess applicant's academic knowledge.

The Canadian Alliance of Physiotherapy Regulators (CAPR) is a national body that assesses academic credentials of internationally educated applicants and administers a written entry-to-practice exam on behalf of all physiotherapy regulatory bodies in Canada, except for Quebec. Prior to 2013, the academic assessment included a detailed review of all courses against a standard syllabus, which reflected the curriculum offered by Canada's 15 accredited programs. Gaps relative to the standard syllabus had to be remediated though approved coursework. This "Prior Learning Assessment and Remediation (PLAR)" process often took applicants 2-3 years to complete.

In 2013, CAPR's registration practices were revised in accordance with the *Pan-Canadian Framework for the Assessment and Recognition of Foreign Qualifications* principles of fairness, transparency, timeliness and consistency. The credential

[24] Based on interviews conducted with CAPR staff: Katya Masnyk (former CEO) – June 17, 2022, Rebecca Chamula (Manger of Credentialing) & Kathy Davidson (Director Assessment Services) – June 15, 2022.

assessment process was streamlined by removing the component of course-by-course review of applicant's academic credentials. Instead, applicants are now required to demonstrate that they have graduated with an entry-level physiotherapy degree that allowed them to become a licensed physiotherapist in their home country to be eligible to write the entry-to-practice exam. The assessment of precedent files (roughly 75% of all those received) is completed in house – non-precedent files are sent to an external agencies for review. Following 10 years of data review and analysis, CAPR has arrived at the following conclusions:

- CAPR staff indicated that credential assessment outcomes under the PLAR system was less about what the applicant knew or learned, and more about how detailed (or vague) the syllabi being reviewed were.
- The average time to complete the assessment process and become eligible to write the exam dropped significantly. Applicants were able to become licensed and integrated into the workforce more quickly than before.
- First-attempt pass rates of entry-to-practice exam for internationally educated individuals have not changed substantially since the streamlined process was introduced (line-by-line review of applicant's education). From this perspective, the value of having individuals remediate any and all identified gaps was limited from a regulatory perspective.

SWOT Analysis – CEQB Syllabi	
Strengths	• Transparent – provides applicants a clear indication of the subjects/areas being assessed for each discipline. • Can foster consistency of assessment outcomes.
Weaknesses	• An overly granular focus on gap identification and remediation may not yield meaningful regulatory outcomes. • For some, gap remediation can take a long time to complete. • Challenging to evaluate applicants from emerging disciplines or those that are not listed among the 21.
Opportunities	• Widespread use among multiple jurisdictions can affect greater consistency in assessment outcomes, and number and types of exams assigned. • The current process of updating syllabi being nationalized allows to be shared with all regulators.
Threats	• Emerging disciplines may not be adequately covered by existing syllabi.

	• Matching the syllabi is not flexible enough as there are lots of different approaches to engineering programs and they don't necessarily align with Canadian. • Efforts required to maintain and keep up to date the existing 21 discipline-specific syllabi.

Technical and confirmatory exams

The purpose of prescribed examinations can be two-fold: to confirm individual's knowledge in a particular engineering subject, and/or to address an academic gap identified in the applicant's education. In many cases, applicants who do not meet academic requirements are assigned confirmatory or technical exams based on the policies of the individual regulator. Exams are grouped in the following categories:

- Preliminary and Basic Studies
- Complementary Studies (CS)
- Discipline Specific (Group A (compulsory subjects) & B (elective subjects))

Confirmatory and technical exams

Confirmatory examinations are prescribed to applicants who, based on the academic assessment, graduated with a properly constituted 4-year bachelor's engineering degree. The exams are assigned to confirm the level and quality of applicant's education, and to ensure that the level of the program is comparable to the CEAB-accredited engineering program. They are professional level examinations that cover the engineering curriculum of the final two years of a bachelor's level program. Typically, regulators assign a minimum of three (up to five) confirmatory exams from the relevant discipline specific syllabus, always from Discipline Specific (Group A & Group B) categories, and sometimes also from Complementary Studies. In some cases, applicants also have an option to write the Fundamentals on Engineering (FE)[25] in lieu of all technical/confirmatory exams, or challenge three technical exams in lieu of one confirmatory exam, though it should be noted that FE exams typically cover materials from years 1 and 2. In some jurisdictions, confirmatory exams may be waived if applicant has five years or more of relevant engineering experience.

[25] Administered by National Council of Examiners for Engineering and Surveying (NCEES). See: https://ncees.org/

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Technical examinations are a self-study option[26] and are typically prescribed in cases where the scope and content of an applicant's engineering education is less certain. The purpose of the exam is to cover deficiencies or missing content in applicant's education. Some jurisdictions allow for up to 18 technical examinations that would cover three categories: Basic Studies, Complementary Studies and Discipline Specific. Applicants can also be given an option to take a university course equivalent in lieu of a technical exam, if the course for the subject in question is available at the regulator approved educational institution.

The exams questions are based on the description in the CEQB syllabus and developed mainly by engineering professors at accredited Canadian universities. They are contracted by Professional Engineers of Ontario (PEO) to write questions, construct forms, and mark the exams. They are offered twice yearly at select centres across Canada, and are now available online with virtual proctoring. The online exam is a three-year pilot and administered by Engineers and Geoscientists BC in partnership with Professional Engineers Ontario (PEO) and Association of Professional Engineers and Geoscientists of Alberta (APEGA)[27].

In 2018, APEGA conducted a review on the psychometric properties of the exams. The report concluded that significant gaps exist between the exam design, development and analysis and psychometric best practice. These gaps include the lack of blueprints to guide exam construction, no statistical analysis of item performance, and arbitrary passing scores (50%)[28].

SWOT Analysis – Technical and Confirmatory Exams	
Strengths	• Examinations as prescribed remediation can offer defensibility, validity and reliability in licensure decision making.
Weaknesses	• May not assess the breadth and depth of knowledge and education offered in accredited programs.

[26] Professional Engineers Ontario. Technical Exam Program. See: https://peo.on.ca/licence-applications/become-professional-engineer/academic-requirements/technical-exam-program

[27] Engineers and Geoscientists British Columbia (2022). "Candidate Guide For Online Examinations". See: https://www.egbc.ca/getmedia/d44199e0-1c18-4623-90c2-9f22cd3cd6ed/Candidate-Guide-for-Online-Examinations-Updated-April-13-2021.pdf.aspx

[28] G. Sadesky (2019). "An Evaluation of Assessment Processes for Engineering Licensure in Alberta: Implications for a National Entry-to-Practice Examination."

	• Examinations may lack psychometric validity depending on their construction. • Exams are developed by professors who teach at universities - public safety is not their core mandate.
Opportunities	• There is an opportunity to psychometrically validate and refine technical exams to ensure that they are fit for purpose.
Threats	• Could be labour and cost intensive to psychometrically review current technical exams.

Fundamentals of Engineering (FE) exam

The Fundamentals of Engineering (FE) is a computer-based, six-hour exam and has 110 multiple-choice questions. It is available year-round for seven disciplines: chemical, civil, electrical and computer, environmental, industrial and systems, mechanical, and other disciplines. The FE exam is designed for recent or soon to be graduates of US engineering degree from an EAC/ABET accredited program. The content of the exam covers the majority of the courses seen in an American undergraduate curriculum for seven engineering disciplines that the exam is offered. The exam development process is essentially equivalent to the competency development process more common in Canadian examination development but takes as a starting point the job tasks that are required for professional practice[29]. It is administered and scored by The National Council of Examiners for Engineering and Surveying (NCEES). The exam questions are developed by NCEES's exam committees which consist of approximately 20 practicing engineers per discipline.

Canadian regulators use the FE exam to confirm non-CEAB applicants' technical knowledge of engineering. Depending on regulator policy, it can be written alone, in lieu of or assigned with other technical exams based on the applicant's assessment outcomes. The FE exam is recognized and used by all engineering regulators because of its rigour, reliability, and comprehensiveness. However, there are limitations to using a non-Canadian entry-to-practice exam:

[29] G. Sadesky (2019). "An Evaluation of Assessment Processes for Engineering Licensure in Alberta: Implications for a National Entry-to-Practice Examination."

- The exam is developed based on US accredited program curriculum and represent their education standards, practice analysis and competencies – these are not necessarily the same as in Canada
- Canadian regulators making licensure decisions based on the outcomes of an US exam might be challenged to defend and justify this practice
- Canadian regulators have no input or control over the content, design and quality of the exam

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SWOT Analysis – Fundamentals of Engineering Exam	
Strengths	• Gold standard in the US to assess and confirm applicant's technical knowledge of engineering • Use of the American FE exam doesn't require financial or human resources from regulators to administer or maintain
Weaknesses	• FE exam is based on foreign academic curriculum and practice standards • Canadian regulators do not have an input on development and administration of the FE exam
Opportunities	• Some regulators are interested in development of Canadian exam equivalent to the FE and could spearhead such efforts
Threats	• Could be labour and cost intensive to develop a Canadian version of the FE

Additional coursework and/or training

In some jurisdictions, applicants may have the option to complete courses offered by an accredited (or regulator-approved) educational institution to address identified gaps. This remediation option is not available in all provinces due to the limited availability/frequency of some courses (in some cases only offered every two years) for certain engineering disciplines. Most accredited programs offer the majority of their courses mid-day and on-campus, preventing newcomers of pursuit of full-time employment. Other limitations, such as seat availability in a specific program or institutional policies preventing applicants to enroll without certain prerequisites, are often encountered as well. Allowing applicants to choose or mix forms of remediation provide flexibility, even if the access to these programs is not consistent.

Research conducted as part of the Environmental Scan suggest that the following elements be considered when prescribing additional coursework for the purposes of remediation:

- Was the academic gap accurately identified?
- Do certain applicants benefit more from this type of remediation?
- Can the gap it be addressed effectively through the prescribed coursework?

Comparing curriculum and syllabi may identify missing courses but not necessarily gaps in someone's knowledge (i.e., what the applicant actually learned or didn't learn in a particular program). In addition, certain concepts are taught in several programs or throughout the course of the entire program. If the syllabus of each course is not well defined or written, assessors may not be able to identify certain academic concepts or topics during the review process.

The methods of assessment used in evaluating the breadth and depth of engineering program and identifying gaps can be best applied to recent graduates. Their academic program and learning objectives can be assessed with more accuracy compared to Canadian syllabi as both reflect the current engineering practice. Assessing the quality of education and determining academic deficiencies for mature applicants is more complex. The engineering profession is continuously evolving, and so does the content and the delivery of education. "Missing" courses/subjects in mature applicant's education do not necessarily mean that the applicant has knowledge gaps in a particular subject. In some cases, it simply provides a snapshot of what the nomenclature, engineering profession and academic standards were at the time they received the education in their home country. If the applicant has been continuously practicing in the engineering profession, it may not be correct to

consider academic gaps as deficiencies that could potentially affect the quality or safety of their work.

Prescribing courses to remediate gaps is particularly appropriate for applicants who are recent graduates. Since the deficiencies in their assessment are identified based on their education only, consideration of work experience is not an option. The exposure to a Canadian coursework which includes an evaluative component (i.e., with graded assignments and assessments) will not only remediate gaps in question but also strengthen and confirm applicant's knowledge in a particular subject.

Mature applicants' credential assessment includes review of education and work experience. Identified gaps might be academic, might be related to competency, or might be a mix of both. Prescribing a one-size-fits-all course or a random mix of those will address the gap(s) "on paper" but not necessarily bridge what they already knew, what they have learned since, or how it can all be applied in their Canadian engineering context.

SWOT Analysis – Additional Coursework and/or Training	
Strengths	• Additional coursework strengthens knowledge in a particular subject. • Giving applicants an option to choose one or more courses provides flexibility and higher chances of being able to address academic gaps. • Assessment tools built within a course remediate and confirm applicant's competence.
Weaknesses	• Limited availability and access to certain courses • Will not remediate gaps effectively if they are not accurately identified during the assessment or on the Canadian syllabus description. • In certain cases, might not be the best method of remediation for mature applicants. • Maintaining a list of approved courses requires dedicated resources.
Opportunities	• Developing and maintaining a list of acceptable courses would provide applicants clarity, more options and access to this type of remediation.

Threats	• More challenging to measure the long-term success of remediation.

Formal, regulator-recognized bridging programs

A comprehensive means of addressing common academic gaps is the Internationally Educated Engineers Qualification (IEEQ) program, often referred to as a "Bridging Program". Initially developed for internationally educated engineers seeing credential recognition, it has provided other benefits such as an opportunity to meet academic requirements for licensure, update technical knowledge, learn English terminology, understand Canadian practice standards and/or gain professional experience.

Prior to enrolling into the bridging program, applicants must apply for licensure and have their credentials assessed by the provincial regulator. Based on the outcomes of the assessment and the number of confirmatory exams prescribed, applicants may be eligible to apply. The institution determines whether the university courses correspond well to regulator prescribed examinations, seat availability and if the applicant meets other prerequisites.

The content and design of each bridging program is personalized depending on applicant's engineering discipline, number of required courses and study timelines. Typically, bridging programs include between six to ten courses. At some universities, the number is calculated based on prescribed confirmatory exams – one exam corresponds to two bridging program courses[30]. The curriculum taught in technical courses is similar to the content covered in confirmatory exams; other courses are assigned based on course equivalents and available seat spaces. The coursework includes review of the material, assignments, tests, lab work and exams. In addition, some universities have a 4-month paid co-op placement as one of the components of the bridging program. Applicants are encouraged to complete the program between 12 to 24 months.

Due to intensity of the course load and full-time nature of the program, applicants are not able to pursue and maintain meaningful employment while enrolled. Other limitations, such as high fees, program duration and seat availability may deter applicants from enrolling and encourage them to pursue other avenues of remediation. Nevertheless, completing a comprehensive Canadian program, which is

[30] University of Manitoba. Internationally-Educated Engineers Qualification. See: https://umanitoba.ca/engineering/internationally-educated-engineers-qualification

Methods of Academic Assessment for Non-CEAB Applicants tailored to remediate applicant-specific gaps, will confirm their knowledge and competence in engineering concepts, and integrate them more efficiently into Canadian engineering profession.

SWOT Analysis – Formal, Regulator-Recognized Bridging Programs	
Strengths	• A fit for practice educational module specifically designed to address typical gaps is an efficient and effective option for internationally educated applicants. • Bridging programs with co-op placements provide applicant's Canadian engineering experience and help build professional connections.
Weaknesses	• Limited availability of regulator-recognized bridging programs. • Due to intensity of the program full-time employment can be impossible to maintain. • Program fees, program duration and seat availability can deter applicants from entering the program.
Opportunities	• Collaborate with other accredited institutions to develop new bridging programs to build capacity. • Work with provincial governments to have bridging programs subsidized.
Threats	• Applicants may forego for other remediation options that allow for flexibility and an opportunity to work while obtaining licensure.

Part 4: Future Options for Assessment

Several go-forward options are analysed below for consideration by engineering regulators. In thinking through and prioritizing these options, it is important to note two things:

1) They are not mutually exclusive options – each can be pursued individually or in combination with others.
2) Development and implementation of these options will require varying degrees of commitment to collaboration and coordination across Canada.

Option #1 – Development of a full-spectrum Competency Profile

Engineers Canada has developed a set of 34 Core Engineering Competencies grouped into seven categories that individuals need to possess and demonstrate during their supervised work experience[31]. Engineering regulators have used these competencies and accompanying indicators in innovative and defensible ways to assess the readiness of a prospective engineer to practice independently. Exemplary in this regard is the competency-based assessment tool, developed by Engineers and Geoscientists BC (EGBC)[32]. In short, applicants are asked to provide one example and supporting evidence of work completed under supervision that meets each competency indicators set out in the profile described above. Validators (i.e., professional references – in Canada or abroad) confirm the veracity of the information provided and assessors determine the applicant's proficiency relative to a standard rubric. After the competencies have been validated, assessors rate all competencies using the same standard rubric. This system has been shared with a number of engineering and geoscience regulators across the country in accordance with an existing licensing agreement. The EGBC tool is successful from a regulatory perspective as it allows for applicants to provide proof of professional competency in a flexible and fair manner. Moreover, its adoption by other regulators, and the use of a similar tool by additional regulators, fosters consistency in assessment processes and outcomes from a pan-Canadian perspective.

One option that regulators may wish to consider is expanding the current Core Engineering Competencies into a full-spectrum competency profile that covers academic and experience entry-to-practice requirements. Existing national standards and documents including the "Graduate Attributes" included within the CEAB accreditation criteria can serve as a springboard for this work. Competencies in this context are intended to be demonstrable and observable such that they can be measured and evaluated. Successful possession of a professional competency requires an individual to draw on a combination of knowledge, skills and attributes acquired through formal training.

While not an actual assessment tool in and of itself, a competency profile serves as a basis for more flexible means of evaluation and ensures that all applicants are assessed against the same standard. Many of the options that follow, necessitate a competency profile as a first step in their development.

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[31] Engineers Canada (2012). "Core Engineering Competencies". See: https://engineerscanada.ca/sites/default/files/w_Competencies_and_Feedback.pdf

[32] Competency Assessment. See: https://competencyassessment.ca/About

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Many regulated professions, including engineers[33], have adopted a national competency profile to help harmonize admission requirements and facilitate enhanced labour mobility. A full spectrum competency-profile serves to anchor the profession's other core standards and can be used by regulators for a variety of purposes, including, but not limited to:

- Academic program approval/recognition/accreditation
- Assessment of internationally educated applicants
- Continuing competency requirements
- Input into the content and scope of entry-to-practice exams
- Policy and standard development and decision making
- Reference for professional conduct matters
- Public and employer information regarding the practice expectations of professional engineers

[33] Geoscientists Canada has developed a full-spectrum competency profile approved by its CAs – this is relevant as many of these CAs also regulated engineering. See: https://geoscientistscanada.ca/source/pubs/images/EN_Competency-Profile-for-Professional-Geoscientistsat-Entry-to-Practice.pdf

Implementation

Unlike some of the other options described in this paper which can be implemented locally, cooperation involving all regulator across Canada would be necessary for this initiative to succeed. If desired, Engineers Canada could coordinate this work with oversight and approval provided by the regulators.

While "best practice" regarding the development of competency profiles is constantly evolving, the overall approach is fairly standard. A high-level summary of key activities and list of required resources is set out in the table below. The entire process typically takes 18-24 months to complete.

Activity	Details/Resources
Envision parameters and Launch the Project: - Development of Project Plan and Project Charter - Establishment of Steering Committee and associated Terms of Reference - Retention of competency-profile Consultant(s) via a competitive RFP process - Meeting of the Steering Committee and Consultants to establish the parameters of the competency profile and development methodology	- Led by Engineers Canada (EC) with oversight by participating Regulator - Comprised of EC staff and Regulator representation - RFP developed by EC. Consultants selected by Steering Committee sub-group - Coordinated by EC. Facilitated by Consultants.
Execution of 5-6 online focus groups with key informants – likely: educators, regulators, assessors, EITs, new P.Engs., P.Eng.'s with supervisory experience, etc.	Focus groups coordinated and moderated by Consultants. Individuals recruited by EC and participating Regulator. Background information and questions sent to participants in advance (French and English groups).
Review focus group findings and other literature that informs entry-to-practice requirements from a regulatory perspective	Literature provided by EC and Regulator. Collated and synthesized by Consultants.
Establishment of the Subject Matter Expert (SME) group responsible for working with the Consultants to draft competencies. Ideally 7-8 individuals with an	Terms of Reference developed by EC and Consultants to help guide the work of the SMEs. Recruitment of SMEs (national) – input and

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Activity	Details/Resources
understanding of entry-to-practice: educators, P.Eng. supervisors, recent graduates, etc. Group is "apolitical" -i.e., focussed solely on working collaboratively to describe the minimum knowledge, skills and attributes to practice competently, safely and ethically.	recommendations provided by Regulator. Ideally some bilingual members.
Development of draft profile by SME group. Likely 3-4 months in length.	Iterative process - three face-to-face meetings of 2.0 days each or ~8 virtual sessions of 2.0 hours. Travel costs and honoraria may apply.
Draft profile (developed in English) reviewed by Steering Committee. Adjustments made before initiating the validation survey.	Edits suggested by Steering Committee and implemented by Consultants.
Draft profile translated into French and verified by P.Eng.'s.	Professional translation and verification fees.
Online survey instrument drafted and reviewed.	Consultants draft survey questions – reviewed and finalized with input from the Steering Committee.
Draft survey translated into French and verified by P.Eng.'s.	Professional translation and verification fees.
Validation survey launched. Respondents provided with 4-point Likert scales related to: importance, frequency and "entry-level appropriateness". Target of 8-12% response rate.	Survey active for 3 weeks. Invitation and reminder emails distributed to P.Eng.'s by Regulator.
Collation and analysis of survey results. Some competencies "flagged" for review/discussion/revision.	Consultants prepare summary findings and items for discussion – sent to SMEs and Steering Committee
Meeting of the SMEs to review flagged competencies and adjust accordingly.	In person or virtual.
Adjusted/validated competency profile sent to Regulator for comment/feedback per Engineers Canada's policies	Feedback managed by EC.

Activity	Details/Resources
Final modifications to competency profile based on feedback by Regulator.	Edits made by Consultants and approved by the Steering Committee
Preparation and distribution of accompanying methodological report.	Prepared by Consultants and reviewed by Steering Committee

SWOT Analysis

SWOT Analysis – Development of a Full-Spectrum Competency Profile	
Strengths	• Can help to foster long-term consistency/harmonization across Canada in the approaches used to assess and admit individuals to the profession. • Many different types of assessment methodologies and tools can be tied directly to the competency profile affording enhanced defensibility and transparency. • "Learning outcomes" (described in academic syllabi) are often very similar in content and structure to competencies affording new flexible and innovative ways of assessing applicants' education. • Competency-based assessments are in line with "Fairness" best practices.
Weaknesses	• Needs to be kept current. Updates should be scheduled every 5-7 years to ensure that the document is kept up-to-date and relevant. • A competency profile is not an assessment tool itself – need to develop tools tied to the profile to evaluate applicants and ensure breadth and depth of knowledge.
Opportunities	• Competency profile and data collected from the survey can be used by a psychometrician to develop an entry-to-practice exam blueprint. • Positive examples/results from using work experience competencies suggest that a full-spectrum competency profile could be successfully adopted by regulators. • Can be used as a basis for developing mature practice competencies aimed at assessing mid-career applicants.

	• Graduate attributes, used in the accreditation of undergraduate engineering programs exist, which provide the required academic competencies. It would be possible to align the complete competency profile to these. • It would be possible to develop a system that defines competencies for each stage of engineering practice: graduation, start of supervised practice, independent practice, and mature practice – can ultimately be used to inform continuing professional development requirements.
Threats	• May be difficult to ensure buy-in and acceptance by all regulators due to the difficulty in translating required academic knowledge into specific competency statements. Full benefit is only realized if adopted and used by a majority of regulators. • Could represent a significant change from the current discipline-specific method of academic assessment, which may cause challenges with acceptance, adoption and ongoing implementation. • Assessment tools currently tied to the current work experience, Core Engineering Competencies, may need to be updated or redeveloped. • Inherent challenge/balance in making the competency profile specific enough to effectively assess applicants but general enough to reflect the breadth of the engineering profession.

Option #2 - Assessment of mature applicants

In most cases and in most regulated professions, all internationally educated applicants are subjected to the same set of licensure requirements which are based on entry-to-practice standards. Entry-to-practice is an important benchmark for regulators as it typically represents the endpoint of formal learning, and the beginning of independent or supervised practice and professional regulation. For most individuals, assessments tied to entry-to-practice standards make sense – recent graduates are novices with a breadth of academic knowledge and limited professional experience. While they may focus on a specific discipline, they have recent exposure

to a wide variety of topics and can be expected to demonstrate understanding of all of these.

By contrast, a large number of internationally educated (non-CEAB) applicants arrive in Canada with significant professional engineering experience. These individuals will have specialized in a specific area of practice for years or even decades. As in all professions, they gradually become experts in certain areas and lose knowledge of others that are no longer relevant to their work.

Mention of right-touch regulation is instructive here. In 2010 the United Kingdom's Professional Standards Authority, published the first version of this concept[34]. It provided that the level of regulation (and required assessments) be proportional to the level of risk performance of their job poses to the public.

From this perspective, the assessment of mature applicants using entry-to-practice standards and tools is problematic for two reasons. Firstly, an individual who has specialized in a particular area for many years is unlikely to practice in an entirely different field on arriving in Canada. Hence, evaluating this individual as a novice with a breadth of knowledge rather than an expert with in-depth experience is not particularly practical from a regulatory perspective. Put simply, the regulator is spending significant amount of time and effort assessing an applicant's proficiency in aspects of the profession they are unlikely ever to practice. Secondly, an argument can be made that evaluating an individual's education (that could be 20 years old) against current standards is unfair. Additionally, it is neither effective/evidence-based nor applicant-friendly. By comparison, can it be reasonably expected that a Canadian-CEAB-educated engineer that has been licensed and practiced for 20 years, could pass an academic credential review based the entry-to-practice requirements of today? Is this individual fundamentally unsafe?

As outlined earlier, regulation is about managing risk by seeking out evidence that lends confidence to an applicant's ability to practice competently, safely and ethically. From a regulatory perspective, an individual that has been licensed in another jurisdiction and practicing without incident can reasonably be assumed to be safe and competent – the ideal candidate.

While there might be certain knowledge gaps that exist among the cohort of mature applicants (e.g., jurisprudence, knowledge of Canadian practice standards), these can

[34] Professional Standards Authority (2015). "Right Touch Regulation". See: https://www.professionalstandards.org.uk/docs/default-source/publications/thought-paper/right-touch-regulation-2015.pdf?sfvrsn=eaf77f20_20

be addressed though the development of focussed learning modules and successful completion of the National Professional Practice Examination (NPPE). Targeted remediation can be far less onerous and time consuming than administering a series of technical exams and/or additional coursework, yet it still confirms that the applicant is competent and safe to practice in the Canadian environment.

As with many of the options presented, a mid-career assessment tool should be tied to select professional competencies. As detailed earlier, a competency profile, complete with mid-career indicators, can serve as the basis for a common, national approach to a new pathway to licensure for this subset of non-CEAB applicants.

As outlined in the Environmental Scan, both the Canadian Architectural Licensing Authorities (CALA), Engineers and Geoscientists British Columbia, and other engineering regulators, have developed specific licensure pathways for mature applicants (typically 5-10 years). They share similar characteristics:

- History of previous licensure/registration
- An extensive period of work experience with references
- A minimum level of official language proficiency

Several approaches can be used to confirm the competency of mature applicants:

- Review of a portfolio of select projects with aspects tied to required competencies
- A structured, peer-review interview panel with questions tied to required competencies
- A reduced set of remediation requirements based on the competencies confirmed through the above processes

Implementation

While the ultimate format of the mid-career assessment tool is likely to vary based on specific regulatory needs, an overview of the steps involved in its development are set out below.

Activity	Details/Resources
Retain competency assessment experts and team of subject matter experts (i.e., volunteer P.Eng.'s)	Done through the RFP process and call-for-interest
Develop mid-career competencies tied to the full-spectrum competency profile	Need to identify which competencies are relevant in the context of assessing mid-career applicants
Validate draft mid-career competencies via a national survey	Survey with P.Eng.'s to ensure the accuracy and appropriateness of mid-career competencies
Determine the most appropriate tools to use for this type of assessment.	Likely a combination of portfolio/project review and/or structured interview
Develop and test tools to ensure utility and validity.	Field testing can either be done as a low-stakes initiative or as a pilot project before a full rollout

SWOT Analysis

SWOT Analysis – Assessment of Mature Applicants	
Strengths	• Often cited as a best practice by Fairness Commissioners. • Can expedite the time from application to licensure (and employment) – a boon to the individual and the economy. • Assesses selected applicants based on a more appropriate standard – i.e., mature practice competencies.
Weaknesses	• A process relying largely on the opinions of a small group of peer-reviewers can be perceived as subjective. • Can be expensive to the applicant if in-person interviews are needed– i.e., detailed review of work experience – per diems/travel allowances paid to interview panel members. • Difficult to prove validity – doesn't lend itself to psychometric review as well as an exam. • Significant investments in assessor training is required.

Methods of Academic Assessment for Non-CEAB Applicants

	• Must implement inter-rater reliability procedures to reduce variability of decisions and improve overall objectivity.
Opportunities	• Mature practice competencies can be tied directly to the full-spectrum competency profile fostering greater transparency and consistency of assessments. • Could also be used to assess individuals who have let their license lapse and are looking to re-enter the profession.
Threats	• Can negatively impact domestic labour mobility if not all jurisdictions agree to this approach (i.e., the standard and assessment tools used to evaluate and license mature applicants). • Can be perceived as subjective and therefore unfair, or invalid – need to ensure transparency of decision-making process.

Option #3 - Interjurisdiction harmonization and sharing of information

Canada's federated government structure directly effects the way internationally educated applicants are assessed and admitted to regulated professions. The Constitution provides for federal control over official immigration policy, and provincial/jurisdictional responsibility for setting and administering professional self-regulation for most occupations. Prior to the introduction of Chapter 7 of the *Agreement on Internal Trade* (now replaced by the *Canada Free Trade Agreement*), regulators were able to assess applicants transferring from another jurisdiction and set remediation requirements before conferring a license. Now with full labour mobility across jurisdictions, (i.e., permit-on-permit legislation), regulators are no longer able to impose any "additional material requirements (expect for proof of language proficiency) prior to accepting a transfer applicant." Unrestricted labour mobility necessitates that individual regulators have similar entry-to-practice requirements. Any real or perceived variation lends itself to "jurisdiction shopping" where applicants can theoretically register with the "easiest" jurisdiction and then port their license to the jurisdiction of their choice shortly thereafter.

Arguably, it is in the best interest of all Canadian engineering regulators to coordinate entry-to-practice processes to ensure that all non-CEAB applicants, regardless of where they apply initially, are held to similar standards and requirements. In this way, regulators can share a national confidence that all EITs and P.Eng.'s, wherever they

obtained their initial license, are safe and competent to practice. A single entry-to-practice standard across the country also serves the best interests of applicants.

There are several mechanisms researched as part of this work that can potentially contribute to greater regulatory harmonization within Canada:

- Development of common applicant definitions and eligibility criteria (e.g., minimum number of years of professional practice to be designated a mature applicant)
- Cross and inter-jurisdictional training of assessors to affect greater pan-Canadian consistency of credential assessments
- Development of a shared set of precedent files and assessment outcomes
- Similar benchmarks and policies used to waive technical/confirmatory exams
- Development of bridging programs based on similar curriculum
- A shared, national policy (i.e., "looking to exempt") regarding the treatment of Washington Accord degrees
- Shared approaches regarding the treatment of degrees listed in the IIDD database[35]
- A common approach for the use of third-party assessment agencies

Implementation

The steps required to implement any of the above mechanisms differ in scope, cost, and complexity. Some can be achieved though inter-jurisdictional agreements on policy. Others may require more substantial investments to develop and maintain. At a minimum, it is recommended that a permanent committee consisting of leadership and senior staff from all engineering regulators in Canada be formed to identify and prioritize areas where jurisdictional harmonization will create a more robust entry-to-practice regime. This can be done in a gradual, phased approach over time.

[35] The International Institutions and Degrees Database (IIDD) provides up-to-date information about engineering programs from over 140 countries around the world. It includes background about a country's education system, the legitimacy of specific institutions and degrees, and whether a degree meets academic requirements for professional licensure in that country. Retrieved from: https://engineerscanada.ca/news-and-events/news/engineers-canada-launches-upgraded-tool-to-help-regulators-assess-international-institutions-and-degrees

SWOT Analysis

SWOT Analysis – Interjurisdiction Harmonization and Sharing of Information	
Strengths	• Can help to bolster a common pan-Canadian approach to assessing and admitting non-CEAB applicants to the profession – greater clarity for prospective applicants regardless of where they apply. • Allows for sharing and adoption of best practices across jurisdictions. • Much can be achieved through common policies and definitions – little cost involved.
Weaknesses	• Can be difficult to get buy in from multiple jurisdictions – lots of decision-makers involved (staff, Councils, Committees, etc.). • Difficult regulatory balance between respecting jurisdictional autonomy and developing pan-Canadian policies and resources.
Opportunities	• Developing shared resources can yield economies of scale – i.e. cost effective for large and small regulators. • Greater inter-jurisdictional confidence in what "other" regulators are doing.
Threats	• Certain shared resources may require maintenance – need to ensure core funding is available over the long term or the utility and currency of these resources will dimmish over time. • The value of harmonization is proportional to the number of jurisdictions involved – need to involve the greatest number of regulators to achieve the desired impact.

Option #4 - Feasibility and utility of a Canadian entry-to-practice exam

Understanding the costs, benefits and challenges associated with introducing a mandatory, national exam has been a topic of great interest among engineering regulators. Three leading Canadian psychometricians were interviewed on May 8th to better understand the associated implications[36]. The psychometricians were provided

[36] Participating psychometricians included: John Wickett (Wicket Measurement Systems), Chris Beauchamp (Meazure Learning) and Greg Sadesky (Spire Psychometrics).

background information in advance of the teleconference and asked to consider the following questions:

- What should regulators be considering when deciding to establish (or not establish) an entry-to-practice exam?
- What makes a "good" exam from a psychometric perspective?
- What are the main steps required to develop an entry-to-practice exam from scratch?
- What are the strengths and limitations of an entry-to-practice exam from a regulatory perspective?
- Are there issues in using an exam developed in another country?

Participants noted that an entry-to-practice exam can potentially take on a number of forms depending on its regulatory purpose. While the most likely (based on internal consultations) is a Canadian-made exam similar to the Fundamentals of Engineering (FE) offered in the US, other approaches are possible such as a written exam used to confirm the necessary breath and depth of knowledge solely for those graduating from non-CEAB programs.

Even more specifically, is the exam intended to confirm technical skills typically taught and assessed in accredited training programs, or to assess "soft-skills" of particular regulatory relevance (e.g., communication, collaboration, problem solving, ethical behaviour)? The panel of psychometricians indicated that traditional knowledge exams are limited in their diagnostic utility and are therefore being phased out in favour of assessment that tests high-level abilities. In an era of free on-demand information, memorization of concepts and formulae is not a useful indicator of professional competency. What is more relevant is an individual's ability to process and interpret information – this can be achieved (even using a multiple-choice format) by creating an exam blueprint based on professional competencies.

The psychometricians noted potential benefits associated with implementing a national exam. Core among these is its ability to ensure that all potential license holders possess a minimum level of foundational knowledge regardless of where they received their formal education. In short, while accreditation can confirm the quality of an educational program it does not assure the professional competency of individual graduates. They indicated that in some cases there might be a reticence among engineering programs to fail underperforming students – a phenomenon known as "failure to fail" and well-documented in the medical literature. An independent third-

party exam can help to catch those who most lack the necessary skills, knowledge, and attributes to become a professional engineer. This, in in line with the shared responsibility of all regulators who have an obligation to verify the qualifications all registrants.

A recent report commissioned by Association of Professional Engineers and Geoscientists of Alberta (APEGA)[37], suggests that effective regulation can be thought of as a three-legged stool. Confirmation of suitable academic achievement (either though accreditation or other equivalency tools); successful completion of an entry-to-practice exam (to ensure all applicant meet common regulatory standards); and continuing competence (i.e., lifelong learning and professional development). It is suggested that all aspects serve unique purposes from a regulator perspective and potentially all may be required to adequately meet a public protection mandate.

Regardless, the psychometricians indicated that regulators need a compelling reason to alter current licensure requirements. There must be a collective appreciation of the problem that exists and how implementing an entry-to-practice exam will address it.

In the case of engineering education in Canada, an argument can be made that an exam could add value in this regard. The current accreditation model does allow for significant flexibility in the content taught within engineering programs across Canada. Unlike the assessment of non-CEAB applicants which is largely based on comparison with the Examination Syllabi, the education of domestically educated individuals in accredited programs is not bound to a set of prescribed subject areas/topics. Hence, there is potential regulatory value in confirming that graduates from an accredited program possess similar, baseline knowledge of a given discipline regardless of where they received their degree.

While the authors of this report are unaware of research that shows significant disparities among the quality of engineering graduates by program, the CEAB accreditation model does allow for variation in what and how students are taught.

Broad, non-prescriptive accreditation criteria have been developed by Engineers Canada to accommodate the number, variety and breath of engineering programs offered in Canada. The reason given for this flexibility is, "to prevent over-specialization in curricula, to provide sufficient freedom to accommodate innovation in

[37] G. Sadesky, Spire Psychometrics (2019). "An Evaluation of Assessment Processes for Engineering Licensure in Alberta: Implications for a National Entry-to-Practice Examination". Association of Professional Engineers and Geoscientists of Alberta.

education, to allow adaptation to different regional factors, and to permit the expression of the institution's individual qualities, ideals, and educational objectives[38]."

The interviewees also stated that especially in Canada, there are differences in the resources available to individual jurisdictions to assess applicants. The introduction of a common, robust entry-to-practice exam (required by all engineering regulators in Canada) can help to level-set any variation in the quality or rigour that can arise from variability in evaluation approaches.

To be effective, an exam must be sufficiently focussed on purpose and scope. The psychometricians suggested that this may require discipline-specific exams for the engineering profession. As such, there may be challenges in continually creating or adapting exam forms to accommodate emerging disciplines in a timely fashion.

The purpose that the exam satisfies from a public safety perspective must be made abundantly clear to all stakeholders, especially prospective applicants. Failure to do so may leave regulations open to challenges from a variety of groups and perhaps even legal ones.

This perspective is reflected by the Supreme Court of Canada judgment in the 1999 Meiorin case[39]. It was found that licensure requirements must satisfy a three-pronged test to be considered legally defensible:

- [The requirement] was adopted for a purpose that is rationally connected to job performance
- [The requirement] was adopted in an honest and good faith belief that the standard is necessary for the fulfillment of that legitimate purpose
- [The requirement] is reasonably necessary to accomplish that legitimate purpose - This requires the employer to demonstrate that it is impossible to accommodate the employee without the employer suffering undue hardship.

Regulatory bodies across Canada have had to make modifications to their entry-to-practice standards over the intervening decades as a result of this judgement.

Human rights challenges are also affecting the ways individuals are assessed and admitted to regulated professions. By example the Ontario College of Teachers (OCT)

[38] Engineers Canada (2018). "Canadian Engineering Accreditation Board, 2018 Accreditation Criteria and Procedures". See: https://engineerscanada.ca/sites/default/files/accreditation/accreditation-criteria-procedures-2018.pdf

[39] British Columbia (Public Service Employee Relations Commission) v. British Columbia Government and Service Employees' Union (B.C.G.S.E.U.) (1999) 35 C.H.R.R. D/257 (S.C.C.) See: https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/1724/index.do

has recently removed their Grade 12 Mathematics test (MPT) pre-requisite following a successful challenge in the Ontario Supreme Court[40]. It was found that this requirement contravened Section 15 of the Canadian Charter of Rights and Freedoms. The evidence presented demonstrated significant disparities in success rates of standardized testing based on race, including statistical evidence of racial disparities with respect to the MPT specifically. The court ruled that other, less discriminatory and onerous avenues were available to the OCT that could be used to as a means of assessing professional competency.

The psychometricians also felt that to be fair and effective the exam must be designed to meet the needs of a specific candidate group. They indicated that an entry-to-practice exam is neither a fair nor effective way of assessing mid-career applicants.

Finally, the psychometricians cautioned against relying on a foreign exam for domestic regulatory purposes. They collectively indicated that while this method may be convenient and cost effective, there are several drawbacks:

1) Lack of control over content and changes to content
2) Lack of information regarding the development, construction and maintenance of the exam
3) Education in Canada is unique – different accreditation standards, graduate attributes, etc. (not necessarily the same as in other countries)
4) A foreign exam is not fit-for purpose – is not necessary sampling performance data that is relevant to a Canadian regulator

Implementation

The table below highlights the main activities associated with development of a national, entry-to-practice exam. The process described is based on industry best practices and specific input provided by the three psychometricians, consulted as part of this research. Provided the necessary resources (i.e. funding and expertise), the entire development process will take approximately 2.5 years to complete (this excludes selection of exam administrators and implementation).

[40] Ontario Teacher Candidates' Council v. The Queen, 2021 ONSC 7386 (CanLII), <https://canlii.ca/t/jlcvg>, retrieved on 2022-07-29. See: https://www.canlii.org/en/on/onscdc/doc/2021/2021onsc7386/2021onsc7386.html?searchUrlHash=AAAAAQARb250YXJpbyBtYXRoIHRlc3QAAAAAAQ&resultIndex=1#document

Methods of Academic Assessment for Non-CEAB Applicants

Activity	Details/Resources
Project Charter developed – list of sponsors, lead organizations and key stakeholders	Establishment of "Board of Examiners" or equivalent to oversee/approve all major decisions
Retention of exam development team including – psychometricians, lead exam writers, facilitators	Need to identify organization responsible for coordinating development and administration of the exam (new company or Engineers Canada?)
Determine permanent staffing/resource model required to support the exam on an ongoing basis	A business plan with pro forma financials will help determine the fee structure for the exam on a cost-recovery basis
Development of exam blueprints – separate blueprints are required for each discipline (potentially as many as 21 based on examination syllabi) Blueprints can be partially based on a full-spectrum competency profile; it is likely that a focussed analysis of practice for each discipline will be needed	Although each blueprint will need to be disciplines-specific there is likely to be significant overlap in core content areas
Licensing/purchase of exam writing software and storage systems	IT systems are necessary to maintain item banks and develop exam forms
Recruitment of subject matter experts (SMEs) for all selected disciplines – development of exam items	SMEs will work with the exam development team to create an initial batch of items for each exam – item writing will need to occur continually post-implementation to maintain the integrity of the item bank
Translation of exam items	Should the exam be made available in both official languages – equivalent English and French items need to be developed and verified by bilingual P.Engs
Psychometric review of items and setting of cut-scores	Items are reviewed and assembled in initial set of forms – relative difficulty of each form assessed (Modified-Angoff)
Preparation of communication materials and exam policies	Directed at exam takers and key stakeholders (disseminated by Regulator and other stakeholder groups)
Preparation of exam report templates	Exam Construction report, Technical report, Key Validation, etc.

SWOT Analysis

SWOT Analysis – Feasibility and Utility of a Canadian Entry-to-Practice Exam	
Strengths	• Can help to affect greater parity in the skills, abilities, knowledge and attributes of EITs. • Can help to "catch" very low performing graduates that "slip" though the academic system – may elevate the quality of individuals ultimately granted a P.Eng. designation. • Written exams can be competency-based with the ability to test more than just knowledge – i.e., critical thinking, case studies, etc. • Regulators have a different mandate than education institutions – a public protection focus can be built into the exam.
Weaknesses	• Difficult to justify and implement only for non-CEAB graduates from a "Fairness" perspective • May present accessibility issues for applicants who initiate an application outside of Canada • May be hard to define and develop consensus around core disciplines given the rapid growth/expansion of the profession. • Costly to develop, administer and maintain • May be perceived as an additional, unnecessary barrier to licensure.
Opportunities	• The exam blueprint can be based on the full-spectrum Competency Profile (see Option #1) and could help harmonize standards in the profession. • The exam could be used in lieu of technical or confirmatory exams to allow non-CEAB applicants to prove their competence – has the opportunity of being more streamlined than current processes. • Aspects of the exam could focus on those competencies that are often cited in complaints/ investigation instances – may reduce compliance instances in the future.
Threats	• Reputational risk to the profession – adding an additional requirement without adequately justifying its regulatory necessity could be detrimental. • The introduction of a new requirements could result in resistance/frustration from engineering program and students. • Could alter curriculum delivery among CEAB program in a negative way – i.e., "teaching to the exam"

Conclusion

The assessment and admission of non-CEAB applicants is a complex and high-stakes endeavour. Regulators must gather and weigh evidence from a variety of sources to determine an individual's readiness to practice from a public safety perspective. Too onerous a process may be deemed fundamentally unfair or discriminatory and lead to legal challenges. Requirements that are not stringent enough could result in the licensure of unqualified and/or unsafe individuals with potentially disastrous consequences.

Limited resources available to engineering regulators complicates this matter further. There are only so many dollars, staff and volunteers that can be devoted to the assessment of those from non-accredited programs. A "right-touch" philosophy is generally the most appropriate course of action where assessment efforts are focussed on the areas or attributes that pose the greatest risk to the public. While the scope of this analysis is limited to the assessment of engineering education, the lines between what was learned in school versus on the job are often blurred. As described in the many options presented herein, regulators may wish to consider work experience where academic deficiencies have been identified. In some cases, this holistic approach can affect a more flexible and fair approach while still fulfilling a public protection mandate.

As outlined above, there are several options that engineering regulators in Canada may wish to consider adopting or enhancing in their assessment of non-CEAB applicants. Some of these can be implemented unilaterally; others require coordination among most or all jurisdictions. The following table provides a high-level indication of the effort and complexity required to implement each of the assessment options. Three parameters are highlighted: i) resources required (staffing, financial, consulting, IT, etc.), ii) time to implementation, and iii) potential overall benefit.

Options which can be Implemented by Individual Regulatory Bodies

Option	Resources	Timing	Benefit
Use of third-party assessment agencies	Minimal – Discussions with assessment agencies may be required to ensure that proper information is included in their evaluation report.	Minimal – Can be implemented in less than 6 months.	Can provide regulators with confidence in the authenticity of the documents presented and the status of the issuing institution.
Use of MRAs and other articulation agreements	Minimal effort required by individual regulators to incorporate MRAs into assessment processes More significant effort is required among those groups responsible for undertaking the necessary research to support an MRA.	Development of MRAs can take several years. Recognition of MRAs by regulators once completed, could be implemented within a short time frame.	Can provide regulators with confidence in the quality and comparability of an international system of education.
Use of precedent files	Moderate – Initial investments in IT and staff training required to establish an internal searchable file library.	Moderate – IT set up and inputting of existing documentation (12-18 months). The utility of the library will increase as new files are added over time.	Can help to standardize assessments for individuals graduating from the same program/institution/ year of study.

Methods of Academic Assessment for Non-CEAB Applicants

Option	Resources	Timing	Benefit
Use of structured interviews	Moderate – Subject matter experts and psychometric oversight may be required to ensure an evidence-based and defensible approach.	Moderate – Development of the interview format and discipline-specific questions will likely take 12-18 months to complete.	Can provide regulators with confidence in an individual's knowledge of a given engineering discipline. Can be used in situations where educational documents cannot be obtained.
Use of CEQB Examination Syllabi	Minimal – Syllabi have already been developed. Staff/assessor training may be required.	Minimal – Can be implemented in less than 6 months.	Can help to standardize assessment outcomes and enhance the defensibility and transparency of the assessment process.
Use of technical and confirmatory exams	Minimal – These are available and used by most engineering regulators already.	Minimal – Can be implemented in less than 6 months.	Can provide regulators with confidence in an individual's knowledge of a given engineering discipline.
Use of additional coursework and/or training	Minimal – Need to develop an approved list of available courses mapped to academic gaps	Immediate – Courses are offered by existing institutions and paid for by the learner.	Can help to remediate specific academic gaps common among non-CEAB applicants.

Methods of Academic Assessment for Non-CEAB Applicants

Option	Resources	Timing	Benefit
	they are intended to address.		
Development of formal regulator-recognized bridging programs	Moderate – Need to partner with an educational institution(s) and develop curriculum based on common gaps among non-CEAB applicants. Delivery could be virtual and/or in-person.	Moderate – Typically, government funding can be obtained to develop and plot the bridging program. Ongoing operations and enhancements need to be funded via cost-recovery model paid by the learner.	Can help to remediate specific academic gaps common among non-CEAB applicants potentially streamlining the assessment and admissions process.

Methods of Academic Assessment for Non-CEAB Applicants

Options Requiring Inter-Jurisdictional Cooperation

Option	Resources	Timing	Benefit
Development of a full-spectrum Competency Profile **Assuming Core Competencies that apply to all disciplines*	Moderate – Requires external expertise, recruitment of subject matter experts and national validation surveys.	Moderate – minimum Development time is 18-24 months. Consultations and approval among all relevant groups could be extend these timelines further.	Can serve as a single, national entry-to-practice standard on which assessment tools can be based
Development of a separate assessment pathway for mature applicants	Moderate – Much of this work is already being carried out by select regulators. Making explicit links to a full-spectrum Competency Profile would require input and validation from subject matter experts.	Moderate – minimum Development time is 12-18 months. Consultations and approval among all relevant groups could be extend these timelines further.	Allows for a streamlined assessment pathway for mature applicants in line with "right touch regulation".
Implementation of a national entry-to-practice exam	Significant – Separate blueprints and question banks would have to be developed for all disciplines. Contributions from subject	Significant – Development and of a set of validated exam forms for all disciplines would take several years of complete. Delivery/ administration partnerships/organization would have to be	Can serve to confirm that all license holders possess a minimum knowledge within a given

Methods of Academic Assessment for Non-CEAB Applicants

Option	Resources	Timing	Benefit
	matter experts would be significant as are associated IT and consulting costs.	established. Policy work is also significant. Likely 4-5 years in total before the first administration.	engineering discipline.
Interjurisdictional information sharing and harmonization	Variable – A variety of different initiatives are possible. Some require significant investments in IT and policies, others can be implemented with comparatively little investment.	Variable.	Greater consistency in assessment processes and outcomes regardless of where an individual applies.

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World Education Services, *Recognizing Refugee Qualifications: Practical Tips for Credential Assessment* (2016).

Addendum: Key Findings from Additional Consultations

Alternative Methods of Academic Assessment for non-CEAB Applicants

Workshop Summary – November 23 & 30, 2022

In-Person Workshop – November 23, 2022

On November 23, 2022, an in-person workshop with engineering admissions officials[41] was held to discuss implications and opportunities related to a recent feasibility study conducted on the academic assessment of non-CEAB applicants seeking licensure as a professional engineer (P.Eng). In addition to a copy of the draft report prepared by consultants Keith Johnson and Giedre Johnson, participants were sent a meeting agenda and a briefing note with a series of discussion questions in advance of the workshop (briefing note has been appended in Appendix A). Discussion topics and select responses are bulleted below:

1. *At the outset of the session, participants were asked to comment on the major risks the regulators are seeking to manage when assessing academics of non-CEAB applicants.*
    - Regulators need to ensure procedural fairness for both CEAB and non-CEAB applicants
    - Regulators tend to be risk-averse – often a detailed, "check-box" approach is used when determining the equivalency of non-CEAB education
    - Often academics are looked at in isolation – a holistic view of the individual tends to be fairer and a better indication of professional competence
    - Need to ensure assessment outcomes and licensure decisions are consistent, both within a jurisdiction and across the country (labour mobility)
    - Some aspects of credential assessment focus on evaluation of the educational institution/program, not necessarily individual knowledge

[41] Participants included: Kate MacLachlan, Kalina Bacher-Rene, Jason Ong, Mark Fewer, Amit Banerjee, Stephanie Price, Ryan Melsom, Delee Silvius, Alison Peverley, Stamatia Baker, Natasha Skea, Anjanette Zielinski, Maria Arietta.

- Assessment should have more explicit linkages with the graduate attributes
- Does it matter how applicants obtain skills/knowledge or is it enough that they have it (e.g., formal university education, vs. diploma plus upgrading and experience)?
- Individuals are not given a license for a specific discipline – need to ensure sufficient breadth and depth for engineering as a whole so regulators can be confident that engineers have an awareness of what they don't know

2. *Participants were also asked to comment on the nature and implications of differing assessment practices/policies among regulators.*
   - Some regulators require a 4-year bachelor's degree, others will waive academic requirements based on experience/interviews
   - Could be a collective benefit in establishing common (i.e., Pan-Canadian) guidelines on waiving exams
   - Opportunity to harmonize definitions and thresholds (i.e., mature practitioner – years of experience)
   - Need to have fairly similar practices, timelines and costs among regulators to avoid "jurisdiction shopping"
   - Many regulators still have a heavy reliance on volunteer assessors – there is a desire (consistency/turnaround times) to have this function performed solely by staff, but is largely prohibitive from a cost/volume perspective
   - There was appetite to form a national review committee that assess complex files for consistency and sharing resource/expertise purposes

3. *Comments regarding the utility and practicality of a regulator-sponsored entry to practice exam were also solicited.*
   - Need to be clear on the purpose of the exam – is it to confirm fundamental engineering knowledge or assess other attributes relevant to regulators?
   - Could interfere with the accreditation system as it cexiturrently exists; programs may be designed to "teach to the exam"
   - Could be seen as a fair way of confirming knowledge for both CEAB and non- CEAB graduates – a single standard for all applicants
   - May not be worth the effort to develop a new exam if it will mirror the US FE version

- Need to develop a full-spectrum competency profile first to serve as blueprint for the exam

The workshop concluded with a discussion on areas of inter-jurisdictional collaboration that could be undertaken to improve and streamline the assessment of non-CEAB applicants.

Development of a Full-Spectrum Competency Profile

As detailed in the report, a series of competencies and accompanying indicators have been developed to define acceptable engineering work experience. This has allowed for many regulators to create transparent, defensible and flexible assessment tools to evaluate work experience for both CEAB and non-CEAB cohorts. Meeting participants felt that there would be a benefit in expanding the set of competencies further – to development a full-spectrum profile that would include learning outcomes expected through formal education. To accommodate the breadth of the profession, the competency profile would likely consist of a core set of fundamental competencies, and possibly a series of discipline-specific ones. The model suggested is that used in Geoscience, which reflects the three major streams associated with the profession. Participants noted that there are significant background materials that could be used to inform the content of the profile (current workplace competencies, accreditation standards, graduate attributes, etc.)

Risk Based Assessment

A second area of inter-jurisdictional collaboration proposed by participants, is a system whereby applicants are assessed using an evidence based, risk-profile. Collectively, regulators would develop a set of criteria aimed at defining low risk applicants using longitudinal data from precedent files. These individuals would be assessed in a streamlined fashion by staff within the applicable jurisdiction. More complex files would be flagged and reviewed nationally. A panel, consisting of representatives from participating regulatory bodies, would meet on a regular basis to review these cases collectively as a group and recommended licensure decisions/remediation options based on a shared assessment rubric – final outcomes would be up to the appropriate regulator to determine and impose. This approach

Methods of Academic Assessment for Non-CEAB Applicants would foster greater consistency in assessment outcomes for non-CEAB applicants without circumscribing the authority of the individual engineering regulator.

Virtual Workshop – November 30, 2022

A similar exercise was conducted on November 30th with members of the CEAB[42]. Owing to their unique perspective, participants were sent a different set of questions to consider in advance (see Appendix A). Responses to each of these is summarized below.

1. *At the outset, participants were asked to comment on what interrelationships exist or should exist between the assessment of non-CEAB applicants and engineering program accreditation criteria.*
    - CEQB syllabi used to assess applicants are developed with reference to curriculum delivered in CEAB-accredited programs
    - Must ensure relative fairness for the CEAB and non-CEAB cohorts – processes should be based on similar standards and processes
    - Some slight inconsistencies in the standards used to assess cohorts – used of CEQB syllabi for non-CEAB applicants and use of graduate attributes for CEAB program accreditation
    - Some regulators have developed "board sheets" to assess non-CEAB applicants to supplement the CEQB syllabi
    - Less than half of the graduate attributes relate to technical proficiency – need to ensure that non-CEAB applicants also possess non-technical attributes before being granted a P.Eng designation
    - There can be a perceived difference between assessing a program (i.e., through accreditation) and assessing an individual

2. *A second discussion item related to suggested approaches to assess applicants in new and/or emerging disciplines.*
    - Participants noted that there is a difference between a genuinely new discipline and one that is more a fusion of two existing disciplines
    - Some disciplines lie at the nexus of two regulated professions (e.g., architecture and engineering)

[42] Participants included: Al Stewart, Mya Warken, Pierre Bourque, Mrinal Mandal, Elise Guest, Tara Zrymiak, Paula Klink, James Lee, Nicholas Krouglicof, Julius Pataky, Pemberton Cyrus, Maria Arrieta, Ryan Melsom, Jeff Peiper, Anne-Marie Laroche, Waguih H. El Maraghy, Roselyne Lampron.

- To assess new disciplines, regulators will often convene a group of volunteers from related disciplines – each member of the panel will comment on their particular area of expertise
- For some disciplines, regulators will develop a board sheet or syllabus to ensure transparency and consistency of outcomes
- Regardless of the discipline, assessment should focus on confirming that an individual possesses the core fundamentals related to the safe, ethical and competent practice of engineering
- All decisions should be reviewed by a larger committee to mitigate subjectivity

3. *As in the previous group, CEAB members suggested future project and/or areas of collaboration that could help improve the assessment and licensure of non-CEAB applicants.*
   - Participants noted that it may be worth enhancing the IIDD database to allow for regulators to upload licensure decisions related to specific institutions/programs. This system would allow for jurisdictions to share information at a national level aimed at affecting better harmonized assessment outcomes for engineering graduates from non-CEAB programs.
   - Participants also were supportive of creating a national, full-spectrum competency profile but noted challenges in reflecting current and emerging disciplines within the profession. The profile needs to be broad enough to apply to all areas of engineering yet specific enough to be useful from an assessment perspective.
   - Finally, CEAB members emphasized the importance of continuing to harmonize assessment and admissions standards and policies across the country. Participants noted instances where an individual will apply to a given jurisdiction simply because it is perceived as easier/cheaper/faster and then after becoming licensed will immediately transfer to a different one. In an era where free labour mobility exists, entry-to-practice requirements need to be as similar as possible.

Appendix A: Workshop Briefing Note

In 2021, Engineers Canada commissioned research related outlining various approaches to the academic assessment of graduates from non CEAB-accredited programs. Under the guidance of the CEQB Task Force, significant work has been completed during the past year including: an environmental scan of engineering and other regulated professions in Canada and abroad, facilitation of national workshop of key stakeholders and development of a general direction document.

A draft version of the final report, prepared by Keith Johnson and Giedre Johnson in August 2022, has been circulated to engineering regulators for questions and comments. The feedback received will be used to inform a set of revisions before the document is finalized.

The combination of a tight domestic labour market and plans to increase the number of skilled immigrants admitted to the country, arguably makes the assessment of internationally educated applicants more important than ever. As such, Engineers Canada is looking to engage additional key informants before this project concludes in early 2023.

To this end, two facilitated workshops have been scheduled: a face-to-face session with engineering admissions officials on November 23rd and a virtual one with members of the CEAB on November 30th. These sessions are intended to provide an opportunity for participants to explore concepts described in the draft report and discuss potential areas of inter-jurisdictional collaboration.

A meeting agenda, a copy of environmental scan and the draft final report are attached for your reference.

In advance of the workshop, we ask you to review these documents and consider the following questions:

Admissions Officials

1. In general, do you feel the academic assessment and remediation process is just right, too rigorous or not rigorous enough?

2. What are the major risks from a public protection perspective that are managed through the assessment of education?
3. What risks do you see with regard to interjurisdictional differences in the assessment of academic credentials?
4. How can the assessment process be streamlined – from both the applicant and assessor perspectives?
5. Are there certain new processes or practices you are using within your jurisdiction that you want to share?
6. Are there opportunities for coordination and collaboration among engineering regulators you would like to see?

CEAB Members

1. How does/should the accreditation model inform the assessment of non-CEAB applicants?
2. How would you recommend regulators assess non-CEAB applicants in emerging disciplines?
3. Are there opportunities for coordination among engineering regulators and other key stakeholders in the assessment of non-CEAB applicants?

Themes, findings and ideas and emerging from these consultations will be summarized and appended to the final report. We thank you in advance for your input and participation.

BRIEFING NOTE: For decision

Revised Guideline on good character	4.2c
Purpose:	To approve the revised public Guideline on good character
Link to the Strategic Plan / Purposes:	Core purpose 3: Providing services and tools that enable the assessment of engineering qualifications, foster excellence in engineering practice and regulation, and facilitate mobility of practitioners within Canada.
Link to Corporate Risk Profile:	Diminished scope and value of engineering regulation (Board risk) Diminished national collaboration (Board risk) Insufficient representation of marginalized groups in engineering (Board risk)
Motion(s) to consider:	THAT the Board, on the recommendation of the CEQB, approve the revised Public Guideline on good character.
Vote required to pass:	Simple majority
Transparency:	Open session
Prepared by:	Ryan Melsom, Manager, Qualifications and CEQB Secretary
Presented by:	Margaret Anne Hodges, CEQB Chair

Problem/issue definition

- "Good character", which refers to an individual's moral and ethical strength and includes traits such as integrity, candour, honesty and trustworthiness, is a requirement for licensure for every regulator in Canada.
- Regulators must ensure their registrants demonstrate good character and keep the best interests of the public at the center of their professional engineering practice, in order to uphold the reputation of the profession and maintain public trust and, with it, the right to self-regulation.
- In 2021, the regulators requested that the Guideline on good character (the Guideline) be revised to account for the increased dependency on a virtual and remote engineering work, study, applications, and examinations that was accelerated by the pandemic.
- The National Admissions Officials Group identified several instances of new risks related to the current virtual landscape such as self-validation in the newly implemented Competency-Based Assessment system, tampering of official documents submitted virtually, and cheating/seeking aid in virtually administered examinations or other admissions related requirements and processes.
- The CEO Group requested that this review be prioritized given its potential to aid in issues around interprovincial transfers, to assist regulators who may not have a legislative basis on which to assess good character, and to ensure public trust in the profession.
- The Guideline contributes to Strategic Priority 1.2: Strengthen collaboration and harmonization.

Proposed action/recommendation

- That the Board, on the recommendation of the CEQB, approve the revised *Guideline on good character* which will be made available on the public website.
- The CEQB provides services and tools that serve the needs of regulators, engineering licence holders, and applicants for licensure by enabling the assessment of engineering qualifications, fostering excellence in engineering practice and regulation, and facilitating mobility.
- The Guideline can help regulators assess good character and can be referenced in compliance cases. It is also a tool to remind applicants and registrants of their obligations, including in virtual and non-professional environments, and to help applicants understand this requirement for licensure.

Risks

- No risks were identified.

Financial implications

- N/A

Benefits

- CEQB guidelines represent consensus-based, collaborative national perspectives on key topics. This guideline can serve regulators as a resource when developing or revising their own admissions and practice guidelines, which improves consistency and efficiency of regulation across the country.
- The Guideline helps maintain the public's confidence and trust in the engineering profession by providing information on good character, by explaining its importance in the engineering profession, and by outlining why it is in the public interest. Additionally, the guideline provides information on the methods by which regulators assess the character of applicants and registrants.
- The Guideline can help with interprovincial mobility and assist regulators who may not have a legislative basis on which to assess good character.
- Revisions address the emergent good character-related risks accelerated by the current virtual landscape, ensuring the applicants understand that lack of good character can be observed through virtual behaviours and actions.
    - Language was added to highlight that assessments of a registrant's character can be made in various environments, including virtual and non-professional environments.
    - An example was added in section 5. *Applicants for registration* to reflect issues that regulators have encountered due to the new virtual landscape (i.e., 5.1.4 Validator fraud in Competency-Based Assessment (CBA) system).
- Language throughout the guideline was revised to reflect contemporary issues from an equity, diversity, and inclusion perspective, to ensure that applicants and registrants understand that behaviours and attitudes that were once tolerated or even encouraged are no longer considered acceptable.
    - The traits of good character now incorporate issues such as misrepresentation, discriminatory behaviours, accountability as it relates to the governability of registrants, ethical choices and standards, and fairness.
- An example was added in section 5.2 *Registrants* to reflect issues regarding the governability of registrants that regulators have encountered (i.e., 5.2.4 *Lack of responsibility*).
- A list of prohibited grounds of discrimination, as defined by the Canadian Human Rights Act, was appended (Appendix B), as human rights violations would normally be cause for an investigation of an individual's character.

Consultation

- In 2021, the CEQB Admission Issues Committee was charged with the review of the Guideline on good character. The committee is comprised of CEQB members and regulator staff.
- A pre-workshop survey was conducted with CEQB members to help identify gaps and determine the areas requiring substantial review based on the new virtual landscape. Survey results helped shape the workshop, which was held in January 2022. APEGS, APEGA and EGBC provided presentations on case validator issues, cases of academic misconduct in relation to the virtually proctored, online technical exams, as well as other case studies.
- Revisions were identified based on discussions, regulators' feedback and presentations at a national workshop. The initial revisions included linking the Code of Ethics, updating the common traits of good

character, reviewing the document from an EDI perspective, and adding an example that reflects the new virtual landscape.

- The revised Guideline was sent for regulator consultation in July 2022, and received feedback from two regulators and the National Discipline and Enforcement Officials Group. This feedback received was used to finalize the guideline revisions.
- Based on consultation feedback, introductory language to the Code of Ethics was removed to address regulators' concerns and to ensure it remains a useful document. The concept of governability of individuals was also incorporated into the good character trait of responsibility. An example was added to illustrate "lack of responsibility" of registrants and its relation to governability.

Next steps (if motion approved)

- The revised Guideline on good character will be published on the Engineers Canada public website.

Appendices

- **Appendix 1:** Guideline on good character

Revised Guideline on good character

submitted by

Canadian Engineering Qualifications Board

May 26, 2023

1 Introduction

"$Within\ the\ \boldsymbol{character}\ of\ the\ citizens\ lies\ the\ welfare\ of\ the\ republic.$"
$-\ Marcus\ Tullius\ Cicero\ (106-43\ BC)$

This guideline was developed to help define what is meant by "good character" and explain why it is important within the engineering profession in Canada in the best interest of the public.

Good character is a requirement of engineers in every regulator in Canada [1]. Character is defined as "**1.** the collective qualities or characteristics, especially mental and moral, that distinguish a person or thing. **2.** moral strength. **3.** reputation" [2]. Good character connotes moral and ethical strength and includes traits such as integrity, candour, honesty and trustworthiness.

The evaluation of character, and the agreement of what is considered to be of good or bad character is subjective and fluid. Some behaviours and attitudes that were once tolerated or even encouraged are no longer considered acceptable. Our evaluation of character is influenced by social mores, which vary based on culture and location, and change with time.

This guideline will explain why good character is important within the engineering profession, in the best interest of the public, what types of behaviours are considered good or bad character, and how regulators assess the character of applicants and registrants.

2 Importance

The purpose of regulating the practice of engineering in Canada is to safeguard life, health, property, economic interests, the public welfare and the environment [3]. In Canada, provincial and territorial governments have recognized engineering as a profession and have given engineers the privilege of the exclusive right to practise engineering, and with it, the responsibilities of self-regulation.

The public trusts that engineers have the technical and ethical competence to serve society and have a willingness to put the public interest first. As the public may lack specialized engineering knowledge, they typically form opinions about engineers based on interpretation of character and the quality of engineering practices. Therefore, individual engineers must demonstrate good character, in addition to adhering to their jurisdiction's Code of Ethics, in order to maintain public trust, and with it the right of self-regulation. Demonstration of good character includes, amongst other aspects, conduct within a professional capacity and may also include personal conduct.

The engineering profession understands that public trust is carefully conferred and must be protected;

trust is fragile and easily lost. In the best interest of the public, the regulators therefore seek to ensure:

i. that all applicants are of good character before admitting them; and,
ii. that all registrants maintain their good character and uphold the reputation of the profession.

This requirement is not unique. In fact, most self-regulated professions (e.g., healthcare professions, law, accounting, etc.) in Canada have similar obligations, for similar reasons. Self-regulation is not possible without trust, and the simplest way to gain and maintain that trust is through the good character of individual registrants.

3 Defining good character

3.1 Definition

"Good character" is generally held to comprise three elements:

i. the ability to tell the difference between right and wrong;
ii. the courage to do what's right, no matter the personal consequences; and
iii. the ability to assess these issues, within the context of the practice of the profession, in the best interests of the public as a whole.

3.2 Traits of good character

Making an assessment of an individual's character can be difficult unless you can observe them making the types of decisions described above. Despite the limitations, these observations can be made in various environments, including in virtual and non-professional environments. It is therefore helpful to define traits of good character which can more easily be observed and evaluated.

The following are common traits of good character [4]:

- **Trustworthiness:** A trustworthy person is honest, transparent, and reliable. They do what they say they'll do. They have the courage to do the right thing, and they don't deceive, misrepresent themselves, cheat, or steal.

- **Respect:** Showing respect means being considerate of others and not promoting or allowing discriminatory behaviour. It also means using courtesy and treating others with dignity (e.g., with regard to gender identity, sexual orientation, Indigenous identity, age, racial identity, ethnic background, visible or invisible disability, body shape and size, family status, educational

experience, etc.). A respectful person makes decisions that show they value their health and the health of others, treating people and property with care.

- **Responsibility:** Being responsible means understanding the consequences of our own actions, being accountable for our choices and decisions, and their impacts, without blaming others for our actions (this includes having the ability to accept the processes of legal or administrative systems, and abiding by the results). Responsible people try to do their best, show humility, are able to accept criticism, and persevere even when things don't go as planned.

- **Fairness:** Being fair means treating others equitably without favoritism or discrimination, being open-minded to different perspectives, empathetic, and listening to others. It means not taking advantage of others, and not blaming them.

- **Integrity:** Having integrity means having the ability to tell right from wrong, making ethical choices, and having the courage to do what is right to ensure the wellbeing and safety of others. Individuals who have integrity have high ethical standards, show respect for the rule of law, including rules and human rights regulations, and act in the interest of the common good. They conduct themselves with honesty and candour.

While not an exhaustive list, these traits are indicators which would lead one to believe that an individual does possess good character. There are many other traits of good character such as inclusivity, transparency, awareness of positionality, honesty, empathy and compassion for human life and welfare, openness, etc.

Individuals who advocate for the safety and health of communities they work, live, and engage with, including physical, social, and psychological, are deemed to be of good character as they demonstrate and embody many of the above traits. On the other hand, individuals who commit crimes of moral turpitude (see Appendix A) may reveal that they do not exhibit these traits, which would prompt an investigation of the individual's character.

4 Assessing character

4.1 Applicants for licensure

In order to assess the character of applicants, the regulators may employ tools such as:

- Character references;
- Character related questions on the application form;

- Requiring applicants to pass a Professional Practice Examination which includes topics on ethics and the Code of Ethics; and/or
- Criminal background checks.

As stated in the introduction, assessment of character can be subjective, so it is important to consider information from several sources when making an evaluation. A negative finding in any one area does not mean that applicants will be denied licensure, merely that more investigation or a more thorough evaluation may be necessary.

The assessment tools listed above offer the following types of information.

4.1.1 References

Depending on the jurisdiction, applicants may be required to provide character references from engineers or others, who can attest to the applicant's behaviours first-hand. These references are asked to comment on specific aspects, such as integrity, honesty, and trustworthiness, etc. Because the evaluation of character is subjective, more than one reference is necessary. Examples of the types of inappropriate behaviour that could be raised at this point include harassments, discrimination, intimidation, or bullying, of peers, subordinates, clients or supervisors.

4.1.2 Application form

Questions on the application form cover a variety of topics including previous discipline, investigation, censure or disqualification by a regulatory body (for negligence, unprofessional or unskilled practice), criminal offenses, etc.

4.1.3 Professional practice examination

The professional practice exam is required by the regulators to determine if an applicant has a good grasp of legal and ethical matters. Although those who pass the exam may not necessarily have better character than those who fail it, applicants who never master the professional practice exam are typically not as well equipped to deal with the ethical issues that arise in professional practice.

4.1.4 Criminal background check

Given that the purpose of requiring good character is to ensure that engineers maintain the trust that the public have placed in them, crimes of moral turpitude , defined as "conduct that is considered contrary to community standards of justice, honesty or good morals are the primary areas of concern for regulatory bodies in Canada". Appendices A and B contain lists of crimes that involve moral turpitude and human rights violations.

4.2 Registrants

Once applicants are registered as professionals with the regulator, they are expected to maintain their good character and uphold the same high standard of professional conduct. It is through the discipline

process that registrants are held to account for their behaviour. In most regulators, registrants are not automatically subject to investigation due to criminal offences. However, anyone, including members of the public, may file a complaint against a registrant and conviction of a criminal offence would be grounds for a complaint and, subsequently, an investigation.

Since regulators are concerned foremost with safety and the public interest, and secondly with the reputation of the profession, crimes that put into question whether a registrant can uphold those values are considered the most significant. Crimes of moral turpitude can therefore be the grounds for a finding of “conduct unbecoming a member” or its equivalent.

During discipline and investigation a procedure similar to the registration process references is used: more than one individual is asked to comment on their own personal observations of behaviour, based on the complaint.

5 Examples

The following examples illustrate how character has been evaluated by engineering regulators in Canada.

5.1 Applicants for registration

5.1.1 Criminal background checks

An applicant was enrolled in the engineer-in-training program. It was later discovered that the applicant did not accurately provide the mandatory criminal record information as requested on the application form. The Registration Committee of that regulator investigated the matter, conducted an interview with the applicant, and subsequently denied the application for membership based on the grounds of a lack of good character for the following reasons:

- the applicant did not accept responsibility for the crimes that were committed,
- the applicant made false statements on the application form, and
- the applicant was not candid in the interview.

5.1.2 History of bad character

A former registrant, who had been written off for non-payment of dues, applied for reinstatement. In the interim between being written off and the application being reconsidered, the individual was subject to disciplinary action. In considering the application for reinstatement, the Registration Committee noted the number of disciplinary orders that the registrant had been subject to in the past and determined that an interview would be necessary. The individual was asked to provide a background on the disciplinary matters, to provide evidence of rehabilitation, and to provide methods of avoiding future complaints from the public. The application for membership was subsequently denied on the

grounds of a lack of good character for the following reasons:

- the applicant did not take responsibility for the actions that resulted in multiple disciplinary actions;
- the applicant did not have a plan to avoid repetition of these actions; and
- the applicant had a disregard for his duty to uphold and enhance the honour, integrity, and dignity of the engineering profession.

5.1.3 Falsification of documents

An applicant was enrolled in the engineer-in-training program when it was discovered that the marks on the applicant's undergraduate transcript from outside of Canada had been falsified in order to gain entry into a postgraduate engineering program in Canada. The Registration Committee required the engineer-in-training to swear an affidavit that the engineer-in-training had never forged or altered or used a forged or altered degree or transcript of other document or otherwise misrepresented their credentials in any way for the purpose of gaining entry into an academic program or in connection with the application to the regulator. The engineer-in-training was unable to swear the affidavit, as they confirmed that they had falsified the bachelor's marks to gain entry into the postgraduate program. The Registration Committee advised the engineer-in-training that if the regulator receives an application for registration as an engineer from them:

- this situation will be considered with respect to the 'Good Character' requirement;
- the regulator will ask what has been done to mitigate the situation; and
- Council may hold a hearing for suitability for admission to membership under the regulator's good character requirement.

5.1.4 Validator fraud in Competency-Based Assessment (CBA) system

An applicant was enrolled in the engineer-in-training program. The CBA system detected fraudulent activity and alerted the regulator that the applicant may have provided falsified validator information. The Registration Committee contacted the applicant to discuss the potential validator fraud that was detected. The applicant did not cooperate, and did not provide reasonable explanation or verifiable evidence of a real validator. The application for membership was subsequently denied on the grounds of a lack of good character for the following reasons:

- the applicant provided falsified information within the CBA system, and
- the applicant did not accept responsibility for their actions.

5.2 Registrants

The following examples illustrate how character has been used in the investigation and discipline of registrants of engineering regulators in Canada.

5.2.1 Lack of trustworthiness

A registrant was found guilty of having signed and sealed blank sheets of paper. The registrant was given a three-month suspension and ordered to write and pass the Professional Practice Examination.

5.2.2 Lack of trustworthiness and fairness

A registrant who was a Field Engineer with the Ministry of Forests, responsible for awarding engineering contracts, was found to have set up a company in his wife's name, bid on Ministry jobs, and done work on Ministry time. The registrant was suspended for a period of 14 months.

5.2.3 Lack of respect, compassion or integrity

i. A registrant who had concerns about the structural integrity of a bridge wrote emails stating that the responsible bridge engineer was incompetent. This statement was unfounded and lacked evidence. For these reasons, the registrant was suspended until such time as they were willing to provide an apology for the conduct.

ii. A registrant was found to have discriminated against a woman graduate engineer, having used derogatory terms to address her and making statements such as "You can dance on tables for me, but you will never work for me." The registrant was found guilty of professional misconduct in that his actions were "disgraceful, dishonourable and unprofessional". The registrant's licence was suspended for twelve months, and was not to be reinstated until he took a course related to gender sensitivity, and paid for the costs of the Discipline hearing.

iii. A registrant was found guilty of unprofessional conduct for having repeatedly yelled at a woman colleague, despite written communication from the colleague indicating that the behaviour upset her and was contributing to health problems. The colleague eventually quit as a result of the abusive behaviour. A Discipline panel concluded that this behaviour was "sufficiently extreme so as to reflect badly on the Member and on the profession" and therefore constituted unprofessional conduct. In response to this charge, and to four other charges brought at the same time, related to inflated and inconsistent billing and improper and wrongful filling of liens, the registrant was found to have acted dishonourably, disgracefully and to have shown a lack of integrity. In order to protect the public, preserve the integrity of the profession, deter others from engaging in similar disreputable business practices and renounce the conduct, the registrant was fined $5,000 and his licence was suspended for a period of 8 months.

5.2.4 Lack of responsibility

A registrant was served with a Notice of Hearing to address six allegations of unprofessional conduct. The registrant refused to attend the disciplinary hearing and suggested that the Hearing Panel had no jurisdiction to proceed. The Hearing Panel determined that it did have the jurisdiction to proceed and the hearing proceeded in the registrant's absence. The registrant made accusations regarding employees and representatives of a regulator of incompetence, stupidity, misconduct, collusion,

conspiracy to cover up illegal activity, and suggestions of responding to political interference. These accusations were found to be groundless and showed a blatant disrespect for the registrant's regulator, and that this conduct harmed the honour, dignity, and reputation of the regulator by rejecting and insulting the authority of the regulator and by attempting to limit or restrict the regulator's public duty to carry out its investigation of the complaints against the registrant. After receiving submissions from the Investigative Committee and the registrant, the Hearing Panel found that "the registrant was ungovernable, and could not be permitted to remain as a Member of the profession". The registrant's license was revoked, being permanently ineligible for registration with the regulator, was ordered to pay a fine of $10,000, as well as the costs of the proceedings.

5.2.5 Criminal convictions

Information was received by a regulator that a registrant had been charged and convicted of possession of child pornography. An investigation was initiated by the regulator. The registrant signed a "resignation agreement" with the Investigation Committee, resigning his registration and agreeing not to apply for reinstatement for at least seven years. It was stated that if the registrant were to apply for reinstatement, he would have to satisfy Council that he was of good character and good repute and that his conviction did not render him unsuitable before he could be reinstated.

Appendix A

The following is a list of crimes that involve moral turpitude, as defined by the United States Department of State Foreign Affairs Manual[1]. These crimes demonstrate conduct that is considered contrary to community standards of justice, honesty or good morals. Conviction of any of these crimes would normally be cause for an investigation of an individual's character.

Crimes against Property

Fraud:

- Making false representation
- Knowledge of such false representation by the perpetrator
- Reliance on the false representation by the person defrauded
- An intent to defraud
- The actual act of committing fraud

Evil intent:

- Arson
- Blackmail
- Burglary
- Embezzlement
- Extortion
- False pretenses
- Forgery
- Fraud
- Larceny (grand or petty)
- Malicious destruction of property
- Receiving stolen goods (with guilty knowledge)
- Robbery
- Theft (when it involves the intention of permanent taking)
- Transporting stolen property (with guilty knowledge)

Crimes committed against governmental authority

- Bribery
- Counterfeiting
- Fraud against revenue or other government functions
- Mail fraud
- Perjury

[1] The US definition of crimes that involve moral turpitude is used throughout Canada.

- Harboring a fugitive from justice (with guilty knowledge)
- Tax evasion (willful)

Crimes committed against a person, family relationship, and sexual morality

- Abandonment of a minor child (if willful and resulting in the destitution of the child)
- Assault (this crime is broken down into several categories, which involve moral turpitude):
    - Assault with intent to kill, commit rape/sexual assault, commit robbery or commit serious bodily harm
    - Assault with a dangerous or deadly weapon
- Bigamy
- Paternity fraud
- Contributing to the delinquency of a minor
- Gross indecency
- Incest (if the result of an improper sexual relationship)
- Kidnapping
- Lewdness
- Manslaughter:
    - Voluntary
    - Involuntary (where the statute requires proof of recklessness, which is defined as the awareness and conscious disregard of a substantial and unjustified risk which constitutes a gross deviation from the standard that a reasonable person would observe in the situation. A conviction for the statutory offense of vehicular homicide or other involuntary manslaughter only requires a showing of negligence will not involve moral turpitude even if it appears the defendant in fact acted recklessly)
- Mayhem
- Murder
- Pandering
- Prostitution
- Rape (including "Statutory rape" by virtue of the victim's age) and sexual assault

Attempts, aiding and abetting, accessories and conspiracy

- An attempt to commit a crime deemed to involve moral turpitude
- Aiding and abetting in the commission of a crime deemed to involve moral turpitude
- Being an accessory (before or after the fact) in the commission of a crime deemed to involve moral turpitude
- Taking part in a conspiracy (or attempting to take part in a conspiracy) to commit a crime involving moral turpitude where the attempted crime would not itself constitute moral turpitude.

Appendix B

The following is a list of prohibited grounds of discrimination, as defined by the Canadian Human Rights Act. Human rights violations would normally be cause for an investigation of an individual's character.

Human rights violations

- Discrimination on the grounds of:
    - race
    - national or ethnic origin
    - colour
    - religion
    - age
    - sex
    - sexual orientation
    - marital status
    - family status
    - disability, and
    - a conviction for which a pardon has been granted or a record suspended.

End notes

[1] Engineer Here, Engineers Canada, The five requirements for licensure in Canada, online, https://engineerhere.ca/practising-engineering-canada/five-requirements. Retrieved January 5, 2023.
[2] Barber, Katherine (ed.), Canadian Oxford Dictionary. Oxford University Press Canada, 1998.
[3] Engineers Canada, Guideline on the Practice of engineering in Canada, online, https://engineerscanada.ca/public-guideline-on-the-practice-of-engineering-in-canada. Retrieved January 5, 2023.
[4] Engineers Canada, Guideline on the Code of Ethics, online, https://engineerscanada.ca/publications/public-guideline-on-the-code-of-ethics#-fundamental-principles. Retrieved May 9, 2022.

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"Professional Engineers Act, R.S.O. 1990, c. P.28", 2021, Ontario Laws, https://www.ontario.ca/laws/statute/90p28

"Foreign Affairs Manual(FAM)", U.S. Department of State, 2022, https://fam.state.gov/search/viewer?format=html&query=moral+turpitude&links=MORAL,TURPITUD&url=/FAM/09FAM/09FAM030203.html#M302_3_2_B_2

"Justice Laws Website", Government of Canada, 2022, https://laws-lois.justice.gc.ca/eng/acts/H-6/

"National Professional Practice Exam (NPPE)", Professional Engineers Ontario, 2022, https://www.peo.on.ca/licence-applications/become-professional-engineer/professional-practice-exam

BRIEFING NOTE: For decision

Observers at Board meetings	4.3
Purpose:	To consider the matter of observers at Engineers Canada's Board meetings
Link to the Strategic Plan/ Purposes:	Board responsibility: Hold itself, and its Direct Reports accountable
Link to the Corporate Risk Profile:	Decreased confidence in the governance functions (Board risk)
Motion(s) to consider:	*1. THAT the Board, on recommendation of the Governance Committee approve engaging an external governance expert to advise on the roles of observers and their participation and attendance at Board meetings. This review should be conducted within one year.* *2. THAT the Board, on recommendation of the Governance Committee, approve that the Board will include a review of the roles of observers and their participation and attendance at Board meetings as part of a larger governance review to be conducted as part of the 2025-29 Strategic Plan.*
Vote required to pass:	Two-thirds majority
Transparency:	Open session
Prepared by:	Light Go, General Counsel and Corporate Secretary
Presented by:	Ann English, Governance Committee Chair and Director from British Columbia

Problem/issue definition

- At the June 2022 workshop, the Board discussed the issue of observers attending Engineers Canada's Board meetings and asked the Governance Committee to review the issue and provide a recommendation on a go-forward basis. It was shared that some Directors feel uncomfortable having their Regulator representative(s) in the meeting room and that they do not feel free to express themselves fully or vote their conscience, conflicting their fiduciary duty.
- At its meetings, the Governance Committee discussed the issue. The committee sought feedback from the Board during the meeting on February 23, 2023.
- The Board and the 3 Presidents discussed issues around observers and the options presented at their respective meetings on February 23, 2023 and the feedback was mixed.
- Of note, it was suggested during the February 22, 2023 Strategic Plan Foresight Workshop that it may be timely to undertake a governance review as part of the 2025-2029 strategic plan. Should this review be undertaken, the question of open meetings could be further explored and socialized within the context of the organization's broader governance structure.
- It is important to recognize that observers, in this context, includes Regulator CEOs and presidents and CFES and EDC representatives. According to Board policies 7.2, *Board relationship with the Canadian Federation of Engineering Students* and 7.3, *Board relationship with the Engineering Deans Canada*, CFES and EDC reps must be invited to Engineers Canada spring (May) meetings. In practice, however, since these groups are considered Key Stakeholders, they get invited to each of Engineers Canada's Board meetings, with the exception of its June Board meeting.

Proposed action/recommendation

- It was noted that there has been no external governance expert consultation of the current governance process and structure, especially surrounding the issue of the attendance of observers at the meetings of directors. It is recommended that the staff engage a governance consultant immediately or as a part of Strategic Priority and review governance as a whole.
- It was recognized that the governance consultant would provide research and best practices to inform a Board recommendation. A recommendation for bylaw changes would ultimately require approval by the Members.
- It was recommended that either the external consultation be conducted within the coming 12 months, or as part of governance review as a part of Strategic Priority, provided that it could be completed within 12 months.

Other options considered

- None.

Risks

- Various risks have been previously identified:
  - Currently, observers may influence Board decisions and discussions.
  - For closed meetings, there will be potential disengagement and loss of collaboration opportunities with the key stakeholders. In such events, emphasis the communication to the key stakeholders may put more responsibilities and put onus on the directors.

Financial implications

- None.

Benefits

- The Board and its Key Stakeholders have access to clear policies about the requirements and procedures for operations and governance at Engineers Canada.

Consultation

- None.

Next steps

- Upon Board approval, the staff will either engage an external governance consultant or submit for the governance review as a part of Strategic Priority.

Appendix

- None.

BRIEFING NOTE: For decision

Board policy updates	4.4
Purpose:	To approve revisions to existing Board policies
Link to the Strategic Plan/ Purposes:	Board responsibility: Ensure the development and periodic review of Board policies
Link to the Corporate Risk Profile:	Decreased confidence in the governance functions (Board risk)
Motion(s) to consider:	*THAT the Board, on recommendation of the Governance Committee approve the following revised Board policies:* ***i.*** *1.2 Guiding principles* ***ii.*** *4.3 Code of conduct* ***iii.*** *4.9 Role of the Presidents (President-Elect, President, and Past President), and 6.13 President-Elect nominations and election process* ***iv.*** *6.9 Canadian Engineering Accreditation Board* ***v.*** *6.10 Canadian Engineering Qualification Board* ***vi.*** *7.1 Board, committee, and other volunteer expenses*
Vote required to pass:	Two-thirds majority
Transparency:	Open session
Prepared by:	Light Go, General Counsel and Corporate Secretary
Presented by:	Ann English, Governance Committee Chair and Director from British Columbia

Problem/issue definition

- Seven (7) revised policies are presented today for approval.

Proposed action/recommendation

- That the Board review and approve the proposed revisions to the existing policies presented in Appendix 1.
    - **1.2, Guiding principles:** Proposed changes to clarify the intention of the policy is highlighted in Appendix 1. Given the organization's long-standing mandate, it is unlikely that the policy will benefit from a review more frequent than every 3 years.
    - **4.3, Code of conduct:** The Governance Committee considered the potential inclusion of an "appeals" section in the policy as per the discussion of the Board at its February meeting but recognized Section 4.3.4(5) essentially provides for an appeal process within Engineers Canada's current authority. A minor revision was added to strengthen the purpose of the process.
    - **4.9, Role of the Presidents (President-Elect, President, and Past President), and 6.13 President-Elect nominations and election process:** At the June 2022 Board retreat, it was raised that it takes time for a President to become familiar with, and feel comfortable in, the position, even with the existing one-year introduction as the President-Elect. Thus, it is proposed to increase the President's term from one to two years. This would allow the President-Elect to become better trained and prepared for the position and would make them a more effective President. It was discussed that the term of the Past President did not need to be augmented as it is largely an honorary role. Should the Board approve

these changes, it is further recommended that a future Governance Committee review and recommend an appropriate timetable to implement these changes so that future Presidential candidates can be well informed before making a commitment decision. The proposed changes are in 4.3 Code of Conduct, 4.10 Standing agenda items, 4.12 Board self-assessment, 4.13 Individual Director assessment, 6.2 Board, committee, and task force chair assessment, 6.8 Governance Committee terms of reference, and 6.12 Human Resources Committee terms of reference. The proposed revisions to the existing policies are presented in Appendix 1.

- **6.9, Canadian Engineering Accreditation Board/ 6.10 Canadian Engineering Qualification Board:** In 2019, the terms of reference of the CEAB and CEQB were revised based on the recommendation of the Nominations Task Force (see pages 179-188 of September 2018 agenda book – *en français le lien se trouve ici et l'information et aux pages 188-199*). The term limits recommendations were accepted by the Engineers Canada Board on September 26, 2018 and subsequently included in the terms of reference. To manage expectations of existing CEAB and CEQB members, they were "grandfathered" and permitted to serve three 3-year terms (the previous term limit), as had been explained to them during their recruitment. Today, there are no members of CEAB or CEQB who have served only six years in line with the new term limits. This is a result of the grandfathering, and because new members approved since the policy changes in 2019 have not yet reached their six-year mark. As a result, there is no data to indicate whether the shorter terms have hindered the CEAB or CEQB's ability to deliver on their mandate. The CEAB requests to increase the term lengths of its members and the CEQB requests to increase the term lengths of its chair. Increasing the term length for the CEQB Chair to two years would result in an equal increase in term lengths for the vice- and past-chairs. The chair's time on the executive would then be six years. The Governance Committee supported the requested changes of the CEAB and CEQB as they recognized the complicated nature of the work, the long learning curve and the expressed workload issues identified by these two groups.
- **7.1, Board, committee, and other volunteer expenses:** The requested revisions are made to enable volunteers to purchase business class seats for flights with a segment over four hours. In addition, the policy clarifies that volunteers will be reimbursed in cases where they have purchased flights to attend Engineers Canada events where they must cancel due to an emergency. Long travel times from the coast(s) and the north is a normal requirement for many volunteers and is a severe impact on their work life balance and mental health. It takes a great deal of time away from the volunteers ability to continue to support their paid work as planes are now almost always full and it is not possible to work in an economy seat, especially with the front seat reclined providing no space for work. Access to a lounge such as the Maple Leaf lounge can help in managing the impact of these disruptions but is not accessible for most volunteers (but it is with a Business ticket). These impacts are such that they actually affect the decisions of volunteers to commit to the Board and their attrition or retention. Engineers Canada's policy has for many years established that the level of comfort for train travel is business class and so a precedent for this level of comfort has been established. Recognizing the severe negative impacts of long flights on volunteers is necessary and respectful. Providing the ability for business class travel will help alleviate some of the negative impacts and respect the commitment of the volunteers.

Other options considered

- None.

Risks

- Operating without clear and up-to-date policies puts Directors and the organization at risk in terms of compliance and the transfer of corporate knowledge. This risk is mitigated, in part, through regular and ongoing policy reviews.
- **4.9, Role of the Presidents (President-Elect, President, and Past President), and 6.13 President-Elect nominations and election process:** It may be difficult to obtain good, qualified chairs who are willing to occupy this role for the longer term. If the board supports these changes to term lengths, significant changes to numerous associated policies will be required affecting the role of President-Elect and the Past President.
- **6.9, Canadian Engineering Accreditation Board/ 6.10 Canadian Engineering Qualification Board:** Overturning the previous Board decision may be negatively perceived.

Financial implications

- **7.1 Board, committee, and other volunteer expenses:** The requested revisions have cost implications for Engineers Canada. FAR reviewed the cost implications and said they were manageable and supported the changes as a potential ongoing cost of doing business. This assessment was provided before the FAR became aware of PEO's decision to join the Engineers Canada Home and Auto Insurance Affinity Program.

Benefits

- The Board and its Key Stakeholders have access to clear policies about the requirements and procedures for operations and governance at Engineers Canada.
- Volunteer engagement and retention.

Consultation

- In addition to a preliminary review done by Engineers Canada's governance staff, the following individuals were consulted on the revisions to the policies under review:
  - The Manager, Accreditations and CEAB Secretary was consulted on Board Policy 6.9, *Canadian Engineering Accreditation Board*.
  - The Manager, Qualifications and CEQB Secretary was consulted on Board policy 6.10, *Canadian Engineering Qualification Board*.
  - The Director, Finance, the CEO, and the FAR Committee were consulted to determine cost implications related to the revisions that the committee discussed to Board policy 7.1, *Board, Committee, and Other Volunteer Expenses.*

Next steps

- Upon Board approval, the policy manual will be updated to include the revised policies and to remove policy 7.13.

Appendix

- **Appendix 1**: Marked-up (track change) versions of the policies

1 Introduction and background

The introduction and background contain information that helps provide context for the policies in this manual.

1.2 Guiding principles

Date of adoption: April 9, 2018 (Motion 5693)	*Review period: ~~Biennial~~Triennial*
Date of latest amendment: May 28, 2021 (Motion 2021-05-5D)	*Date last reviewed: May 28, 2021*

Commented [LG1]: Review period from every 2 years to 3 years.

The guiding principles are statements that inform and guide decision-making and organizational initiatives at Engineers Canada, and reflect its mission statement. They embody the corporate culture and clarify what is most important. In times of ambiguity, they point to the preferred course of action. They refer to "how" things should be done, not "what" needs to be done. The guiding principles are:

(1) Serve the needs of the Regulators.

a) Achieve a balance between serving the needs of individual Regulators and strengthening the collective interest:
   i. through dialogue, and
   ii. as determined collaboratively by the Regulators.

b) Regulators own the relationship and the dialogue with individual license holders of the profession.

c) Demonstrate the link between Board direction, the purpose of Engineers Canada, and the needs of the Regulators.

(2) Ensure transparency and accountability in the decision-making process.

a) Ensure that the process is clear and transparent.

b) Actively engage all affected parties in the process.

c) Ensure that all comments and guidance provided during consultations are considered during the process.

d) Share supporting background and rationale for final decisions with all affected parties.

(3) Encourage the commitment and engagement of the Regulators.

a) Proactively develop and maintain a national understanding of and consensus on the issues affecting the Regulators and the profession.

b) Provide Regulators with an effective forum for collaboration and consensus-building to understand, prioritize and advance the collective requirements of the Regulators.

(4) Enable equity, diversity, and inclusion in the Canadian engineering profession.

a) Recognize the critical importance of a diverse engineering profession, which is supported by an inclusive climate for the future of the profession.

b) Support and encourage the equitable opportunity for all qualified people to participate within the engineering profession without regard to race, color, religion, gender, gender identity or expression, sexual orientation, national origin, disability, or age.

c) Develop programs and initiatives designed to advance the profession by promoting a diverse and inclusive culture in the profession.
d) Convene Regulators and engineering stakeholders to support the adoption of best practices in equity, diversity, and inclusion, and to share timely and relevant research on diversity in the profession.
e) Deliver ongoing information, training, and resource support to help the Board, Board committees, volunteers, and staff to develop capacity to address equity, diversity, and inclusion in their work.
    i. Equity, diversity, and inclusion training will form part of mandatory Board and staff training so that specific, measurable diversity provisions are incorporated into all areas of work.

4 Role of the Board

4.3 Code of conduct

Date of adoption: April 9, 2018 (Motion 5693) *Review period: Biennial*
Date of latest amendment: February 23, 2023 (Motion # 2023-02-5D) *Date last reviewed: February 23, 2023*

This policy is intended to provide guidance to members of the Board and Board committees in managing the affairs of Engineers Canada. It does so by setting out the principles, standards and guidelines of ethical conduct, thereby ensuring confidence, transparency and trust in the integrity, professionalism and impartiality of the decisions made by the Board and Board committees.

4.3.1 Board and committee member conduct

(1) Engineers Canada is committed to ensuring an inclusive and supportive environment. Board members and members of Committees shall, at all times, conduct themselves in an ethical, professional, and lawful manner. This includes proper use of authority and appropriate decorum.

(2) Expected behavior for Board members and members of Board committees at in-person and/or virtual events, activities and meetings include that:

a) They shall refrain from violent behavior, harassment, intimidation, retaliation or any form of discrimination and shall treat one another and staff members with respect, co-operation, and a willingness to deal openly on all matters, valuing a diversity of views and opinion;
b) They should be considerate, respectful, and collaborative with others;
c) They should communicate openly with respect for others, critiquing ideas rather than individuals;
d) They should avoid personal attacks directed toward others;
e) They should be mindful of their surroundings and their fellow participants; and,
f) They should respect the rules and policies of the meeting venue, hotels, Engineers Canada contracted facility, or any other venue.

(3) Unacceptable behavior by Board or Board committee members includes, but is not limited to:

a) Verbal or written comments that are not welcome and/or are personally offensive that relate to gender, sexual orientation, disability, physical appearance, body size, race, religion, national origin, or age;
b) Violations of federal or provincial laws that could result in fines or civil damages payable by Engineers Canada or that could otherwise significantly harm Engineers Canada's reputation or public image;

c) Unethical conduct and/or conduct that contravenes any Engineers Canada policies or its Code of Conduct; and

d) Danger to the health, safety or well-being of staff, other Board or Board committee members and/or the general public.

(4) Board members and members of Board committees shall ensure that unethical, unprofessional or illegal activities not covered or specifically prohibited by the foregoing or any other legislation are neither encouraged nor condoned and are reported as per section 4.3.3, *Compliance with Board policies*.

(5) A Board member or a member of a Board committee who is no longer holding good standing status with their provincial Regulator shall be suspended from participation in Board and Board committee activities until they return to good standing status.

(6) A Board member or a member of a Board committee who is alleged to have violated this Code of Conduct shall be so informed. As per section 4.3.4, *Complaints Process*, such breaches may be investigated.

(7) Upon appointment, Directors shall sign the oath of office or other suitable undertaking.

(8) Upon appointment, Board members and members of Board committees shall sign an acknowledgment of Policy 4.4, *Confidentiality*.

4.3.2 Conflict of interest guidelines

(1) Board members and members of Board committees shall act at all times in the best interests of Engineers Canada. This means putting the interests of Engineers Canada ahead of any personal interest or the interest of any other person or entity. It also means performing their duties and transacting the affairs of the corporation in such a manner that promotes public confidence and trust in the integrity, objectivity and impartiality of the Board or Committee.

(2) Board members and members of Board committees shall not use their Board or Committee position to obtain employment at Engineers Canada for themselves, family members, or close associates. Board and Committee members must resign from the Board or Board committee before applying for employment with Engineers Canada.

(3) Board members and members of Board committees shall not directly or indirectly offer or accept cash payments, gifts, gratuities, privileges or other personal rewards, which are intended to influence the activities or affairs of Engineers Canada. Board members and members of Board committees may, however, give or receive modest gifts or hospitality as a matter of general and accepted business practice, provided the foregoing does not include cash or other negotiable instruments and provided all gifts or hospitality have been disclosed and properly accounted for.

(4) Both prior to serving on the Board and during their term of office, Directors must openly disclose a potential, real or perceived conflict of interest as soon as the issue arises and before the Board or its committees deal with the matter at issue.

(5) If a Director is not certain whether they are in a conflict of interest, the matter may be brought forward to the President or the Board for advice and guidance.

(6) If there is any question or doubt about the existence of a real or perceived conflict of interest, the Board will determine by majority vote if a conflict of interest exists. The Director potentially involved in the conflict of interest shall be absent from the discussion and shall not vote on the question.

(7) It is the responsibility of other Directors who are aware of a real, potential or perceived conflict of interest on the part of a fellow Director to raise the issue for clarification, first with the Director in question and, if still unresolved, with the President of the Board or the full Board.

(8) The Director must declare the conflict in advance and, if decided by the Board, shall:

a) abstain from participation in any discussion on the matter;
b) not attempt to personally influence the outcome;
c) refrain from voting on the matter; and,
d) leave the meeting room for the duration of any discussion or vote.

(9) The disclosure of a conflict of interest and decision as to whether a conflict exists shall be recorded in the minutes of the meeting.

(10) Directors have an ongoing obligation to disclose conflicts of interest in accordance with s. 141 of the Canada *Not-for-profit Corporations Act*.

4.3.3 Compliance with Board policies

(1) Board members and members of Board committees are expected to comply with all Board policies. A Board member or member of a Board committee who is unsure about the interpretation of any policy should consult with the President or the CEO. Anyone unable to carry out the material responsibilities of their position or to conduct themself in a manner consistent with Board policy, should consider voluntarily resigning their position.

4.3.4 Complaints process

(1) The purpose of Complaints process is to structure the process of handling complaints to provide a fair and effective response to complaints. Anyone who wishes to file a complaint against a Board member or member of a Board committee for a violation of this policy, the confidentiality policy, or the oath of office (both contained within Policy 4.4, *Confidentiality*) must do so in writing and address it to the President. If the matter involves the President, the complaint shall instead be

addressed to the President-Elect. The written complaint must identify the complainant, the respondent (i.e. the subject of the complaint) and the grounds for the complaint.

(2) Within 15 business days of receiving the complaint, the President or, if the matter involves the President, the President-Elect, shall establish a panel to consider the complaint. The panel shall consist of the President, the President-Elect, and the Past-President or, if the office of the Past President is ~~approaching the end of their term on the Board~~ vacant, one additional Director, as determined by the President and the President-Elect. Where the complaint involves any of the preceding, an alternate Director shall be appointed. The selection of an alternate Director shall be at the discretion of the remaining panel members.

Commented [LG1]: In case that there is no office of Past President.

(3) In considering the complaint, the panel shall decide whether to proceed to investigate the complaint or not. If the panel is of the opinion that:

a. The complaint is frivolous or vexatious or is not made in good faith; or,

b. The complaint is outside the jurisdiction of the Board or would be more appropriately dealt with through another process (e.g. through a Regulator's disciplinary process); or,

c. There are no grounds or insufficient grounds for conducting an investigation,

then the panel may choose not to investigate or may dispose of the complaint in a summary manner. In such an event, the complainant shall be advised of the panel's decision in writing, with reasons provided. If the panel decides to investigate the complaint, the respondent shall be provided with a copy of the written complaint and any related information, and shall be given the opportunity to present a written response within 30 days of receiving notice of the complaint.

(4) The panel shall consider the complaint and the response and may involve outside consultants (such as a workplace investigator) to assist. If an investigation is initiated, attempts shall be made to interview the complainant and the respondent (the "parties") as well as others who are reasonably identified as having information that could assist in investigating and/or resolving the complaint, including members of Engineers Canada staff.

(5) Upon conclusion of the investigation, the panel shall consider the results of the investigation and determine the course of action for disposing of the complaint, which shall be set out in a written report that is provided to the parties. The panel may:

a) Determine that the complaint is unsubstantiated and/or does not warrant further action;
   i. If the complainant is not satisfied with that decision, they may submit the written complaint to the full Board for further consideration;
b) Mediate between the parties, until the complaint has been resolved;
c) Make any recommendations reasonably necessary to resolve the complaint; or
d) Refer the complaint to the Board.

(6) If the matter is referred to the Board, it shall be heard at the next Board meeting, in an in-camera session. The Board shall be presented with the complaint, the response, and the report. The parties shall be invited to attend to respond to questions from the Board.

(7) If the complainant or the respondent is a Board member, then they shall recuse themselves from the deliberations and any vote upon a motion regarding the complaint, if any.

(8) For those Board members or members of Board committees who have been found, by the panel or the Board, as applicable, to be in violation of the Code of Conduct or policy 4.4, *Confidentiality*, they may be subject to any of the following sanctions:

a) A requirement to modify or discontinue the conduct giving rise to the complaint;
b) A requirement to undergo education, training or other remedial action;
c) Admonishment or reprimand;
d) Removal from Board- or committee-related assignments and/or loss of duties or privileges;
e) A report to the individual's home Regulator, submitted to the Council via its president or secretary;
f) Termination of their position on a Board committee (for members of Board committees only);
g) A recommendation to the Members to remove the Director from the Board (for Board members only); or,
h) Any other reasonable or prudent sanction as appropriate under the circumstance.

(9) If the parties do not cooperate with the investigation or the decision of the panel or the Board, as applicable, the Board may take such further action as it deems appropriate up to and including termination from a Board committee, or a recommendation to the Members to remove the Director, as appropriate.

(10) Investigations conducted under this policy shall be conducted in a fair, timely and confidential manner that respects the principles of procedural fairness and natural justice. To the extent possible, complaints should be resolved within 120 days of being initiated, or as early as practicable.

(11) All complaints received under this policy and all information and records received, reviewed or generated during the course of an investigation and disposition of a complaint, including interviews and reports, are and shall remain strictly confidential, and are only to be viewed by members of the panel and those who are authorized by the panel.

(12) The panel shall inform the Board, in an in-camera session at the next Board meeting following the initiation of a complaint, of any complaints made under this policy. Similarly, the Board shall be informed when the complaint is resolved and the manner in which it was disposed of.

4 Role of the Board

4.9 Role of the Presidents (President-Elect, President, and Past President)

Date of adoption: April 9, 2018 (Motion 5693) *Review period: Triennial*
Date of latest amendment: December 7, 2020 (Motion 2020-12-10D) *Date last reviewed: February 25, 2022*

(1) The Board comprises ~~three~~ officers; the President, the President-Elect, and the Past President (collectively, the "Board officers"). Individuals elected into the President-Elect role automatically succeed into the role of President when the President's term concludes. The President thereafter occupies the position of Past President. Together, the Board officers form a strong team for advancing the governance of the organization. They are responsible for approving the agenda for all Board meetings, including the summer Board workshop, and they constitute the de facto panel when complaints are made in respect of Board or committee member non-compliance with Board policies.

(2) The Board officers may delegate any of the individual authorities and responsibilities set out below, when necessary and as appropriate, in consultation with the other Board Officers and the CEO. Each Board officer remains responsible for the discharge of their responsibilities, notwithstanding any delegation.

Commented [LG1]: The proposed change - the terms of President, 2 years, and President-Elect, 2 years, and Past President, 1 year. There will be one year where there is no office of Past President.

4.9.1 The President role

(1) The President is accountable to the Board.

(2) The President provides the link between the Board and the CEO. The President is the only person authorized to speak for the Board.

(3) The President chairs Board meetings and meetings of the three Board officers.

(4) The President ensures the integrity of the Board's processes and represents the Board to outside parties.

(5) The President must ensure that the Board behaves consistently within its own policies and procedural rules and those legitimately imposed upon it from outside the organization including:
   a) Directing the Board deliberations so they are timely, fair, orderly, thorough and efficient; and,
   b) Endeavoring to establish Board consensus on issues and objectives.

~~(6) The President is the delegate of the Board and votes on behalf of Engineers Canada at meetings of the International Engineering Alliance. The President may delegate these authorities, but remains accountable for their use.~~

~~(7)~~(6) The President conducts the orientation sessions for incoming and new Board members.

Commented [LG2]: Given the operational nature of these meetings, the CEO, on behalf of the President, has been attending. It is recommended that this duty be handled by the staff.

~~(8)~~(7) The President can attend meetings of all Board committees as a non-voting ex-officio member. They are a required member of the HR Committee.

(8) The President has approval responsibilities in accordance with Policy 7.1, *Board, Committee, and Other Volunteer Expenses*.

(9) The Term of office for the President shall be for two (2) years.

4.9.2 The President-Elect role

(1) The President-Elect collaborates with the President and the Past President to learn the role of the President, to become familiar with the governance of Engineers Canada and its meeting rules and procedures, and to facilitate Officer transition.

(2) The President-Elect assists and supports the President as needed and plans for the upcoming presidential ~~year~~term.

(3) The President-Elect is responsible for:

a) reviewing and overseeing the results of the annual Director self- and peer-assessment processes (as set out in Policy 4.13, *Individual Director Assessment*);

b) reviewing and overseeing the results of the annual Board, committee, and task force chair assessment process (as set out in Policy 6.2, *Board, Committee, and Task Force Chair Assessment*);

c) the development of the summer Board workshop agenda; and,

d) oversight and guidance to the Engineers Canada consultation process (as set out in Policy 7.11, *Consultation*).

(4) The President-Elect is a required member of the HR Committee.

(5) The President-Elect has approval responsibilities in accordance with Policy 7.1, *Board, Committee, and Other Volunteer Expenses*.

~~(5)~~(6) The Term of office for the President-Elect shall be for two (2) years.

4.9.3 The Past President role

(1) The Past President provides advice and leadership to the President and the Board regarding past practices and other matters to assist in governing.

(2) The Past President supports the President and the President-Elect ~~on an as needed basis~~ as applicable.

(3) The Past President is responsible for:

a) overseeing the implementation of any agreed-upon improvements resulting from the annual survey of the Board's effectiveness (as set out in Policy 4.12, *Board Self-assessment*); and,

b) acting as the Nominating Committee and overseeing the nomination and election process for President-Elect (as set out in Policy 6.13, *President-Elect Nomination and Election Process*).

(4) ~~The Past President is a required member of both the HR Committee and the Governance Committee, and normally serves as chair of the HR Committee.~~ The Term of office for the Past President shall be for one (1) year.

4 Role of the Board

4.10 Standing agenda items

Date of adoption: May 24, 2019 (Motion 5756) *Review period: Biennial*
Date of latest amendment: December 13, 2021 (Motion 2021-12-5D) *Date last reviewed: December 13, 2021*

(1) Meetings are the means for the Board of Directors to make decisions regarding the governance and oversight of Engineers Canada, and to provide direction to the CEO and the chairs of the CEAB and CEQB. In addition, meetings provide an opportunity for Directors to bring information from their home Regulator to the national table, and to receive updates on the activities of Engineers Canada.

(2) At each meeting, the Board receives updates from its committees, including the CEAB, the CEQB, the CEO, the Presidents' Group, and the CEO Group.

(3) The agenda for all Board meetings shall be developed by staff and approved by the Board officers ~~President-Elect, President, and Past President (the "Presidents")~~ approximately two months in advance of each meeting.

(4) The agenda for the summer Board strategic workshop shall be developed by the President-Elect and CEO, and approved by the Presidents approximately two months in advance of the workshop.

4 Role of the Board

4.12 Board self-assessment

Date of adoption: March 1, 2019 (Motion 5736) *Review period: Biennial*
Date of latest amendment: February 25, 2022 (Motion 2022-02-4D) *Date last reviewed: February 25, 2022*

Assessing Board effectiveness is an important governance responsibility. The purpose of Board self-assessment is to give all Board members an opportunity to evaluate and discuss the Board's performance with candor and from multiple perspectives. The ultimate objectives are greater efficiency in the use of the Board's time and increased effectiveness of the Board as a governing body.

4.12.1 Self-assessment process

(1) Three assessment processes are to be used by the Board:

a) a short meeting assessment, conducted at the end of each meeting;

b) an electronic survey, conducted at least annually; and,

c) a more detailed, formal annual survey of Board performance.

A. Meeting assessment

(1) At the end of each Board meeting, the chair will ask that the meeting move in-camera. The attendees will include the Directors, the Direct Reports, and the CEO Group Advisor to the Board. One objective of this in-camera session shall be to engage participants in a healthy discussion about the quality of the meeting and the decisions taken.

(2) In addition, an electronic meeting satisfaction survey will be sent to all participants at least once a year, following the February, May and/or October Board meeting(s).

B. Annual survey of the Board

(1) The annual survey of the Board provides the opportunity to look internally at the Board itself, reflect on Board members' individual and shared responsibilities, identify different perceptions and opinions among Board members, and determine areas of responsibility that need attention. Board self-assessment should not be judgmental or focus only on weaknesses and negative aspects. Instead, it should help the Board with succession planning and governance improvements.

(2) Except when the Governance Committee conducts the governance effectiveness survey (described below), the annual survey and reporting of the Board's effectiveness shall be the responsibility of

the Human Resources (HR) Committee. The survey shall be conducted through an anonymous questionnaire.

(3) The following process shall be used:

a) The HR Committee shall agree upon the structure and content of the questionnaire.

b) The proposed questionnaire will be presented to the Board at the Winter (February) Board meeting for review and approval.

c) The questionnaire will be distributed after the Winter meeting and Board members will complete the questionnaire within two weeks of receipt.

d) Results will be tabulated and analyzed and a Board assessment report will be prepared.

e) The report will be presented to the Board at its Spring (May) meeting.

f) The Board will discuss the report and decide if changes to policies, procedures, or practices are required.

g) The ~~incoming Past President~~ HR Committee will oversee the implementation of any agreed-upon improvements.

Commented [LG1]: In the event of vacancy in the office of Past President, it would be more appropriate that this is handled by the HR Committee.

(4) Opinions and comments expressed during the assessment process will not be attributed to individual Board members but should be shared in the aggregate report.

C. Periodic governance effectiveness survey

(1) In accordance with Board Policy 6.8, *Governance Committee Terms of Reference*, the Governance Committee is responsible to conduct a periodic survey of Regulators and Directors to evaluate the effectiveness of Board governance and operations, and develop action plans to address any required improvements.

(2) In years where the Board conducts the broader governance effectiveness survey, the annual survey and reporting of the Board's effectiveness shall be the responsibility of the Governance Committee. The Board assessment will form one part of the questionnaire, and will include questions for Directors that are designed specifically to evaluate Board performance.

(3) The specific results of the Board self-assessment, including any recommendations for improvements, will be presented to the Board at its spring (May) meeting.

(4) The Board will discuss the report and decide if changes to policies, procedures or practices are required.

4 Role of the Board

4.13 Individual Director assessment

Date of adoption: March 1, 2019 (Motion 5736)	*Review period: Biennial*
Date of latest amendment: December 12, 2022 (Motion 2022-12-4D)	*Date last reviewed: December 12, 2022*

(1) The purpose of Director assessments is to support the development of individual Directors, help them enhance their contribution to the Board, and enable them to have a more positive experience as an Engineers Canada Director. The individual Director evaluation process is conducted with the goals of:
   a) providing Board members with an opportunity to reflect on their contribution, and to receive feedback from their peers;
   b) determining actions that can be taken to increase the value of Director contributions; and,
   c) informing the President-Elect of the strengths, weaknesses, abilities and desires of individual Board members they will be leading in the coming year.

4.13.1 Assessment process

(1) Three assessment processes are to be used by the Board:
   a) an ongoing tabulation of attendance at Board, committee, and task force meetings (to be included in every Board agenda book);
   b) a self-assessment, to be completed by all Directors on an annual basis; and,
   c) a peer assessment, to be completed in alternate years for some of the Board complement.

(2) The peer- and self-assessments will be by electronic survey.

(3) Both peer- and self-assessments shall be the responsibility of the Human Resources (HR) Committee. The following process will be used:
   a) The HR Committee shall prepare draft questionnaires for both the self- and peer-assessments;
   b) The proposed questionnaires will be presented to the Board at the Winter (February) Board meeting for review and approval;
   c) The questionnaires will be distributed after the Winter meeting and Directors shall complete the questionnaire(s) within two weeks of receipt;
   d) Directors will be peer-reviewed in year two of their first mandate, and year one of their second mandate;
   e) All Directors will be asked to peer review those colleagues who are subject to the process in any given year;

f) Individual results will be tabulated and provided to each individual Director and reviewed by the President-Elect;

g) As required, the President-Elect may arrange individual meetings or phone conversations with Directors to discuss the results. The agenda for these meetings may include:

i. Discussion of past performance, level of contribution, areas for improvement, and potential supports required by the Director (e.g. training);

ii. Identification of the Director's interests in future Board activities, as well as succession opportunities; and,

iii. An outline of next steps or agreement on an action plan.

h) The President-Elect may present the overall implications of these conversations to the:

i. The HR Committee to inform the nomination process for Board committees and for new Directors; and,

ii. ~~Past President~~The HR Committee to inform the nomination process for President-Elect.

(4) Notwithstanding the above and given the purpose of supporting Director growth and development, the results of the assessments and the discussions between the President-Elect and individual Directors are to be treated as confidential.

6 Engineers Canada Board committees and task forces

6.2 Board, committee, and task force chair assessment

Date of adoption: February 26, 2020 (Motion 5830) *Review period: Biennial*
Date of latest amendment: December 12, 2022 (Motion 2022-12-4D) *Date last reviewed: December 12, 2022*

(1) The purpose of chair assessment is to give all Board, committee, and task force members an opportunity to evaluate and discuss their respective chair's performance from multiple perspectives. The ultimate objectives are greater efficiency in the use of the volunteers' time. The assessments also serve as an opportunity to support the training and development of leadership for individuals who have agreed to serve as chairs of the:

- Engineers Canada Board;
- Canadian Engineering Accreditation Board (CEAB);
- Canadian Engineering Qualifications Board (CEQB);
- Finance, Audit, and Risk Committee;
- Governance Committee;
- Human Resources Committee; and,
- Any task force established by the Board.

(2) The chair evaluation process is conducted with the goals of:

a) providing chairs with an opportunity to reflect on their contribution as they receive feedback from their peers; and,

b) informing the President-Elect of the strengths, weaknesses, abilities, and desires of current Board, committee, and task force chairs to be used for succession planning.

6.2.1 Chair responsibilities

(1) Chairs work closely with Engineers Canada staff and provide leadership to their committees. They are responsible for:

a) Chairing meetings and setting their agenda;
b) Reviewing committee minutes and briefing notes;
c) Developing, monitoring, and delivering on the work plan, with support from staff;
d) Providing updates on the committee's activities to the Engineers Canada Board;
e) Directing committee deliberations that are timely, fair, orderly, thorough, and efficient; and,
f) Addressing issues arising with and between committee members.

(2) Additional responsibilities specifically related to the CEAB and CEQB chair roles are listed in policies 6.9 and 6.10 respectively.

6.2.2 Chair competencies

(1) To deliver on these responsibilities, in addition to the competencies established in Policy 4.8, *Board Competency Profile*, a chair should demonstrate the following skills, knowledge, and abilities:

a) Ability to build consensus;
b) Understanding and ability to work within the Engineers Canada governance model;
c) Understanding of the broader strategic context;
d) Communications skills and relationship management with key internal and external stakeholders including the CEAB, the CEQB, the Regulators, the CEO Group, the officials' groups and Engineers Canada staff; and,
e) Work ethic, commitment, and ability to meet deadlines.

(2) Additional competencies specifically related to the CEAB and CEQB chair roles are listed in policies 6.9 and 6.10 respectively.

6.2.3 Informal assessment process

(1) To assist Board, committee and task force chairs in obtaining timely, meeting-specific performance feedback from their members, chairs should make efforts to add time at the end of each meeting to conduct an informal meeting evaluation, soliciting constructive and open input from meeting participants.

(2) The structure of the informal meeting evaluations shall be left to the discretion of the chairs, and may focus on obtaining feedback related to the chairs' facilitation skills and meeting preparedness, as well as what went well for the meeting and what could be improved for future meetings.

6.2.4 Formal assessment process

(1) The chair assessment process is done annually via peer-assessments, delivered by electronic survey. Chair assessments shall be the responsibility of the HR Committee, using the following process:

a) The HR Committee shall prepare draft questionnaires for the chair assessments.

b) The proposed questionnaires will be presented to the Board at the December Board meeting for review and approval.

c) The questionnaires will be distributed after the December meeting and Directors and committee members shall complete the questionnaire(s) within two weeks of receipt.

d) All committee members and Directors will be asked to peer review any chairs with whom they work in the given year.

e) Individual results will be tabulated and provided to each individual chair and reviewed by the President-Elect.

f) The President-Elect may arrange individual meetings or phone conversations with chairs to discuss the results. The agenda for these meetings may include:

i. Discussion of past performance, level of contribution, areas for improvement, and potential supports required by the chair (e.g. training);

ii. Identification of the chair's interests in future Board activities, as well as succession opportunities and suggestions; and,

iii. An outline of next steps or agreement on an action plan.

g) The President-Elect may present the overall implications of the assessments and conversations to the:

i. The HR Committee to inform the nomination process for Board committees, and

ii. The ~~Past President~~ HR Committee to inform the nomination process for President-Elect.

Notwithstanding the above, discussions between the President-Elect and individual chairs are confidential.

6 Engineers Canada Board committees and task forces

6.8 Governance Committee terms of reference

Date of adoption: April 9, 2018 (Motion 5693)	*Review period: Triennial*
Date of latest amendment: February 23, 2023 (Motion # 2023-02-5D)	*Date last reviewed: February 23, 2023*

6.8.1 Responsibilities

(1) The Governance Committee is tasked to enhance the Board's effectiveness and efficiency on matters relating to Board governance principles and policies and to fulfill its Board responsibility to *ensure the development and periodic review of Board policies.* In so doing, the Governance Committee shall:

a) Review and maintain the currency and relevance of Board policies and governance documents;
b) Review and make recommendations on the currency and relevance of the Bylaws and Articles of Continuance;
c) Make recommendations for Board education related to governance and Board effectiveness;
d) Undertake such research or reviews as may be assigned by the Board; and,
e) Conduct a periodic survey of Regulators and Directors to evaluate the effectiveness of Board governance and operations and develop action plans to address any required improvements.

6.8.2 Authority

The Governance Committee has the authority to make editorial changes to Board policies such as the correction of typographical and grammatical errors, to ensure the consistent use of terminology and plain language, and to update references.

6.8.3 Composition

(1) The committee is comprised of a minimum of three Directors~~, including the Past President~~.
(2) Quorum for any Governance Committee meeting is 50 per cent of the committee members plus one.
(3) The Engineers Canada Corporate Secretary shall provide support to the Governance Committee.

6 Engineers Canada Board committees and task forces

6.12 Human Resources Committee terms of reference

Date of adoption: May 24, 2019 (Motion 5756)	*Review period: Biennial*
Date of latest amendment: December 12, 2022 (Motion 2022-12-4D)	*Date last reviewed: December 12, 2022*

The Human Resources (HR) Committee enhances the Board's effectiveness and efficiency by overseeing the timely delivery of the Director onboarding and development program and monitoring and assessing the performance of the Board, Board committees, Directors, and the CEO so that Engineers Canada can deliver on its mandate.

6.12.1 Responsibilities

(1) The HR Committee is tasked to fulfill the following Board responsibilities:

a) *Hold itself, and its Direct Reports accountable,*

b) *Provide orientation of new directors and continuing development of directors and others who work closely with the Board*.

(2) In carrying out these responsibilities, the HR committee shall:

a) Nominate new committee members and recommend committee chairs annually, as per Board policy 6.1, *Board Committees and Task Forces*;

b) Annually review policies which provide for the sound management of Engineers Canada's volunteers and personnel;

c) Establish, administer, and annually review competency profiles for the Board, individual Directors, and chairs;

d) Provide oversight of the Director onboarding and development program;

e) Annually review succession plans for the CEO, the Board, and Board committees;

f) Annually confirm succession plans for the direct reports to the CEO;

g) Develop and recommend annual objectives for the CEO to the Board;

h) Conduct regular CEO assessments and make recommendations to the Board regarding annual CEO compensation; and,

i) Review results of the employee engagement survey.

6.12.2 Authority

The Committee has the authority to recruit or contract external resources to assist with its work within

the budget allocated by the Board.

6.12.3 Composition

(1) The HR Committee is comprised of the President, President-Elect, and Past President, as well as a member from the CEO Group and a minimum of two other Directors, all of whom are voting members.

a) ~~The Past President normally serves as chair of the Committee, unless t~~The HR Committee shall decide~~s~~ the chair ~~otherwise~~ of the Committee.

b) The outgoing HR Committee shall, annually, nominate at least two Directors and one alternate to the next year's HR Committee. The alternate Director shall only serve if one of the other Directors is elected by the Board as President-Elect.

(2) Quorum shall be set at 50 per cent of the members plus one.

(3) The Engineers Canada Director of Human Resources shall provide support to the HR Committee.

6 Engineers Canada Board committees and task forces

6.13 President-Elect nomination and election process

Date of adoption: May 24, 2019 (Motion 5756)	*Review period: Biennial*
Date of latest amendment: February 24, 2021 (Motion 2021-02-7D)	*Date last reviewed: February 25, 2022*

This policy outlines a fair and transparent process to nominate and elect the President-Elect. It applies whether voting takes place using in-person or electronic ballots.

6.13.1 Introduction

(1) The President-Elect is elected by the Engineers Canada Board of Directors ~~annually,~~ at the spring (May) Board meeting.

(2) The President-Elect holds office for the period from the date of the election until the date of appointment into President role at a ~~close of the spring Board meeting to the next~~ spring Board meeting.

6.13.2 Eligibility

(1) To serve as the President-Elect, a Director shall:

a) have been nominated to serve as a Director by their Regulator for the ensuing three years; or,

b) subject to being elected or acclaimed, as the case may be, to the office of President-Elect, obtain a written commitment from their Regulator to nominate them for election as a Director for an additional period to enable them to serve as President-Elect, followed by terms as President and then Past President; and,

c) for Directors in their second term, ~~have a minimum of one (1) year remaining in their term of office~~not be qualified.

(2) All candidates for election shall provide, as part of their nomination:

a) A declaration of interest form (Appendix A); and,

b) A curriculum vitae that will be provided to the Board.

(3) All documents must be submitted within the time period set by the Past President, which shall be a minimum of four weeks in advance of the spring Board meeting.

6.13.3 Nomination procedures

(1) The ~~Past-President~~ HR Committee shall act as the Nominating Committee and shall:

a) Maintain an impartial position;

b) Attempt to ensure that sufficient nominations are received;

c) Prior to the spring Board meeting, at least:

i. **Three months in advance:** issue a call for nominations to all Directors, referencing this policy;

ii. **Four weeks in advance**: receive nominations and confirm eligibility; and

iii. **Two weeks in advance**: provide the Board with the slate of candidates and their curricula vitae.

d) Where no nominations are received, the Board shall determine how the position will be filled.

6.13.4 Voting

A. Scrutineers

(1) The Board will appoint two persons to act as scrutineers, typically the Engineers Canada CEO and the president of the Regulator where the meeting is held.

B. Conduct of elections

(1) The Past President shall conduct the elections. If the Past President is unavailable or unwilling to conduct the elections, the Board shall appoint another Board member to act as chair and conduct the elections.

(2) If only one candidate is nominated for President-Elect, the position shall be filled by acclamation.

(3) If more than one candidate is nominated for President-Elect, election for the position shall be by secret ballot.

(4) Each candidate may address the Board, in alphabetical order by last name, for a maximum of five minutes.

(5) Each Director present at the meeting may cast one vote. Proxy votes are not permitted.

(6) Any spoiled ballots will be discarded, and any ballots cast after the election has closed will not be counted.

(7) In the event of two candidates for President-Elect, the President will cast a second vote for one candidate and place the vote in a sealed envelope.

a) If one candidate receives a majority (that is, 50% + 1) of the votes, that candidate shall be declared elected.

b) In the event of a tie in the number of votes received, the scrutineers shall open the sealed envelope and use the vote therein.

(8) In the event of three or more candidates for President-Elect~~,~~ and the President ~~and Past President~~ shall each cast a second vote for all but one of the candidates and place the votes in sealed envelopes.

a) If one candidate receives a majority of the votes, that candidate shall be declared elected.

b) In the event no candidate is elected on the first ballot, the candidate receiving the lowest number of votes shall be removed from the slate and new ballots will be successively presented until one candidate receives a majority of the votes.

c) In the event of a tie in the number of votes received by two or more candidates, as determined by the scrutineers, such that one candidate cannot be dropped from the slate for the next round of balloting, the scrutineers shall first open the President's sealed envelope and use the votes therein. If one candidate can still not be removed from the next round, the scrutineers shall open the Past President's sealed envelope and use the votes therein. If it is still not possible to remove one candidate, the result will be declared deadlocked and one or more further rounds of voting with all remaining candidates on the ballot will take place until the deadlock is broken.

(9) The scrutineers will report the name of the candidate who received the majority of the votes to the ~~Past~~ President-Elect. The scrutineers will not report the vote totals or whether the sealed envelopes were used.

(10) The ~~Past President~~ chair of the HR Committee will thereafter announce the successful candidate.

(11) When the election is complete, the Past President will request a motion to destroy any in-person ballots. This may not be necessary where electronic ballots are used.

Appendix A: Declaration of interest form

Date: _____

To: Chair, Nominating Committee

I,_____, am pleased to confirm that I am placing my name into nomination for election as President-Elect of the Engineers Canada Board of Directors.

I have attached my curriculum vitae, for distribution to the Board.

Term of office

___ I have been nominated by my Regulator to serve as a Director for the required term, or

___ I have received written confirmation that, in the event I am elected or acclaimed, as the case may be, in the office of President-Elect, my Regulator will nominate me to stand for election for an additional period to enable me to serve the term of office.

If elected, I would be pleased and honoured to serve the Board.

_____ _____

(*Candidate signature*) (*Date*)

Encl: Regulator letter of support
Director curriculum vitae

6 Engineers Canada Board committees and task forces

6.9 Canadian Engineering Accreditation Board (CEAB)

Date of adoption: April 9, 2018 (Motion 5693)	*Review period: Annual*
Date of latest amendment: May 27, 2022 (Motion 2022-05-4D)	*Date last reviewed: May 27, 2022*

6.9.1 Terms of reference

The CEAB enhances the Board's effectiveness and efficiency on matters related to the accreditation of academic engineering programs.

A. Purpose/products

(1) The CEAB produces information needed for the Board to make decisions on matters relating to engineering education both in Canada and in other countries. The CEAB performs assessments of academic engineering programs to determine if they meet accreditation criteria approved by the Board. It grants accreditation to those programs that meet the criteria.

(2) In support of these purposes/products, the CEAB will:

a) Review on a regular basis the criteria, policies, and procedures for evaluating engineering programs for accreditation or substantial equivalency purposes;

b) Undertake an evaluation of engineering programs for accreditation upon request of academic institutions and based upon the Engineers Canada Board-approved criteria;

c) Determine the equivalency of accreditation systems in other countries based upon the Engineers Canada Board-approved criteria;

d) Conclude negotiated international mutual recognition agreements at the education level based upon direction from the Engineers Canada Board;

e) Provide regular reports to the Engineers Canada Board regarding the status of international mutual recognition agreements pertaining to engineering education;

f) Maintain effective liaison with engineering accrediting bodies in other countries, with other professions' accrediting bodies, and with other relevant organizations;

g) Provide information and, when appropriate, options and implications, to the Engineers Canada Board on international matters relating to engineering accreditation and engineering education, including implementation and maintenance of international accreditation agreements;

h) Provide advice to Canadian higher education institutions regarding accreditation;

i) Accept feedback from relevant Canadian organizations regarding the Canadian engineering accreditation system;

j) Assure that administrators of assessed engineering programs are aware of the limitations of the assessment and their resulting responsibilities, including, but not limited to:

i. The higher education institution offering the engineering program shall adhere to all accreditation criteria and regulations, shall fully disclose with relevant documentation all aspects of the program, and shall advise the CEAB immediately of any significant changes to its accredited program(s); and,

ii. There is no legal right to accreditation. The CEAB assumes no responsibility and shall not be liable to students, graduates, or any other party who may be affected by the denial, termination, or revocation of accreditation.

k) Assure that administrators of those programs that are assessed as being insufficient to be accredited are aware of the reasons and the process to initiate a reassessment or an appeal.

B. Authority

(1) The CEAB's authority enables it to assist the Engineers Canada Board in its work. In addition to the authority granted through Policy 6.1, *Board Committees and Task Forces*, the CEAB also:

a) Accredits programs in Canada or recognizes equivalencies of engineering programs in other countries in accordance with the Engineers Canada Board's approved Accreditation Criteria and Procedures;

b) May establish Committees and Task Forces to assist in carrying out its work;

c) May deal directly with organizations and individuals; and

d) The CEAB representative at Washington Accord meetings is authorized to vote on behalf of Engineers Canada.~~;~~

(2) The CEAB has no authority to:

a) Change Engineers Canada Board policies;

b) Approve changes to Accreditation Criteria and Procedures, except for those which are of an administrative (housekeeping) nature;

c) Enter into financial agreements;

d) Spend or commit organization funds, unless such funds are specifically allocated by the Engineers Canada Board;

e) Make representations that any graduate of an accredited program will be eligible for licensure;

f) Conduct a program accreditation prior to receipt of a request from a higher education institution;

g) Conduct substantial equivalency visits of engineering programs in other countries if the cost of such visits is not borne by the higher education institution without specific permission of the Board; or,

h) Make representation that it will identify every aspect of an assessed engineering program that does not meet its accreditation criteria and regulations.

C. Composition

(1) The CEAB is composed of the Chair, the Vice-Chair, the Past Chair and shall include one member from each of the following regions:

- British Columbia
- Alberta
- Saskatchewan or Manitoba
- Ontario
- Quebec
- Newfoundland, Prince Edward Island, Nova Scotia, or New Brunswick

and should include one member from:

- Yukon, the Northwest Territories, or Nunavut.

(2) The CEAB also includes members-at-large. The total number of members is based on the anticipated future workload.

(3) Two Directors of the Engineers Canada Board shall be appointed to the CEAB by the Board.

(4) All members of the CEAB must be licensed engineers in Canada.

(5) Quorum shall be set at 50% of the members +1.

(6) The Chair, the Vice-Chair, and the Past Chair constitute the Executive Committee of the CEAB.

(7) The membership of the CEAB shall ideally be composed of:

a) 2/3 of its members either currently or formerly employed as a faculty member at a higher education institution; and,

b) 1/3 of its members either currently or formerly engaged in the practice of professional engineering as described below.

(8) For the portion of the membership that is from outside of the field of academia, consideration should be given to candidates having one or more of the following attributes:

a) Experience as an employee of a government agency, crown corporation, or regulatory authority, in the review and/or approval of professional engineering work prepared by others;
b) Experience in the technical review of professional engineering work prepared by others; or,
c) Experience in the supervision, mentorship, or development of engineers-in-training or recently licensed engineers.

(9) In the selection of members for the CEAB, every reasonable effort shall be made to achieve a diverse membership, representative of the Canadian population. In so doing, Regulators will be encouraged to consider making appointments which will result in the CEAB:

a) Including at least 30% women, with a long-term goal of gender parity, representative of the Canadian population; and,
b) Including perspectives from Indigenous, Black, people of colour, and internationally educated engineers.

(10) The CEAB secretariat, appointed by the CEO, supports the CEAB and its members are non-voting participants in meetings of the CEAB and its subcommittees.

D. Term limits

(1) The term of appointment to the CEAB shall be for a period of three (3) years. Members may, subject to the approval of the Engineers Canada Board, be twice reappointed for an additional three-year term, for a total of up to ~~six (6)~~ nine (9) years of total service.

(2) The foregoing term limits shall not apply to a member who is elected or confirmed, as applicable, to hold office as Vice-Chair, Chair or Past Chair prior to the expiration of their second term, in which case they may continue until they have finished serving as Past Chair.

(3) ~~The Engineers Canada Board may also, under exceptional circumstances, extend the term of appointment for other members of the CEAB beyond the six-year limit, up to a maximum of nine (9) years total service. For such an extension to be considered, the rationale must be provided to the Engineers Canada Board.~~

(4) The term of office for the positions of Chair, Vice-Chair, and Past Chair of the CEAB shall be for one (1) year.

E. Planning

(1) The CEAB is responsible for the preparation of a work plan and a volunteer recruitment and succession plan and will operate within those plans.

a) The CEAB shall produce and maintain a work plan that includes a list of the ongoing work and identifies the volunteer resources needed to accomplish the work.

b) The CEAB shall maintain a list of its members, including appointment dates and positions. This information shall be used as the basis for development of a volunteer recruitment and succession plan that identifies the desired profiles for new appointments.

(2) The plans must be submitted annually to the Engineers Canada Board for approval.

F. Observers at Meetings

(1) The CEAB shall invite the following representatives to its meetings, as observers, each of whom shall be granted the right to be recognized as a speaker in the CEAB's open sessions:

a) The president of the Canadian Federation of Engineering Students (CFES), or the CFES president's designate; and,

b) The chair of Engineering Deans Canada (EDC), or the EDC chair's designate.

(2) The CEAB may invite other observers to its meetings, including a member of the CEQB. Such observers do not have voting rights and shall only be granted speaking rights at the discretion of the meeting chair.

6.9.2 Role of the Chair of the CEAB

The Chair of the CEAB is crucial to the success of Engineers Canada. The Chair is directly accountable to the Engineers Canada Board for the achievements of the CEAB.

A. Responsibilities

(1) The Chair works closely with the secretariat and other Engineers Canada staff, and provides leadership to the CEAB in the delivery of valuable services, products, and tools for the Regulators. In addition to the responsibilities required of all Chairs in Policy 6.1, *Board Committees and Task Forces,* the CEAB Chair is also responsible for:

a) Chairing their Executive Committee and participating on the Nominating Subcommittee;

b) Reviewing the volunteer recruitment and succession plans, as developed by the secretariat;

c) Reviewing the budget (as developed by the secretariat) and working with the Engineers Canada CEO to deliver on their work plan within the Board-approved Budget and resource constraints;

d) Working with the Engineers Canada CEO and the secretariat to develop interim performance assessment reports and the annual performance report for the Engineers Canada Board and the Regulators;

e) Attending meetings of the Engineers Canada Board;

f) Contributing to the development, implementation, and achievement of Engineers Canada's Strategic Plan;

g) Being knowledgeable of and working to support the delivery of the work of the CEAB; and,

h) Ensuring that members behave consistently with their own rules and those imposed upon them from the Engineers Canada Board including endeavoring to establish consensus on issues and objectives while maintaining a national perspective.

B. Competencies

To deliver on these responsibilities, the Chair should demonstrate the skills, knowledge, and abilities defined for all committee Chairs in Policy 6.1, *Board Committees and Task Forces*. In addition, the CEAB Chair must have a demonstrated in-depth knowledge of accreditation, and an understanding of the application of the CEAB's criteria and processes.

6.9.3 Process to appoint members to the CEAB

A. General requirements

(1) The Nominating Subcommittee shall ensure that Regulators have sufficient time to process potential candidate requests within their own jurisdictional policies and procedures.

(2) The Nominating Subcommittee shall not consider, nor recommend to the Engineers Canada Board, any candidates who do not receive the support of their Regulator(s).

(3) The procedures outlined below shall be followed in the order they are written.

(4) All appointments to the CEAB shall be subject to the approval of the Engineers Canada Board.

B. Nominating Subcommittee

(1) The Nominating Subcommittee of the CEAB shall consist of the Chair, Past Chair, and the two Director appointees. The senior Director appointee shall serve as chair of the Nominating Subcommittee.

(2) The Director appointees shall have voting privileges on the Nominating Subcommittee. All candidates must receive majority support of Nominating Subcommittee. Any tied vote of the Nominating Subcommittee is a failed motion.

(3) All information considered by the Nominating Subcommittee shall be kept confidential.

C. New appointments and vacancies

(1) The Nominating Subcommittee must always select from amongst the candidates approved by the Regulators, the candidate who, in the Nominating Subcommittee's opinion, would best fit the desired profile.

(2) The Nominating Subcommittee shall contact the candidate to confirm their willingness to serve if they are appointed by the Engineers Canada Board.

(3) The Nominating Subcommittee shall recommend the selected candidate to the Engineers Canada Board.

(4) The Nominating Subcommittee shall contact all unsuccessful candidates to thank them for their expression of interest, explain the selection process, and indicate that their expression of interest shall be retained for consideration in case of any future vacancies.

(5) In addition to these requirements, the Nominating Subcommittee shall complete the following steps for all types of nominations:

a) Members from the regions

i. Each Regulator in the region shall be provided with the desired profile of the candidate(s) being sought.

ii. Each Regulator within the region shall be asked to provide the names of up to three (3) candidates who they would support for the position. The Regulators shall be asked to indicate their preference, or the rank of all candidates, if desired. All information will be considered in confidence by the Nominating Subcommittee.

b) Members at large

i. All of the Regulators shall be provided with the desired profile of the candidate(s) being sought.

ii. Each Regulator shall be invited to submit the names of candidates it would support for the position. The Regulators may submit as many names as they like. The Regulators shall be asked to indicate their preference, or the rank of all candidates, if desired. All information will be considered in confidence by the Nominating Subcommittee.

iii. The Nominating Subcommittee shall also prepare and publish a call for expressions of interest which shall be posted on Engineers Canada's website and in its newsletter, and distributed to other relevant stakeholders, as identified by the Nominating Subcommittee. The call for expressions of interest shall include the desired profile of the candidates being sought.

iv. The names of all qualified candidates submitted to the Nominating Subcommittee by groups or individuals other than the Regulators shall be forwarded to all Regulators where the candidate is licensed and those Regulators shall be asked to identify which of those candidates they would support for the position.

D. Vacancies

(1) In the event of a vacancy occurring on the CEAB mid-year and/or prior to the completion of a term of office, the Nominating Subcommittee shall select from amongst the list of candidates provided by the Regulators and from those candidates who have received confirmation of support from their Regulators, which were compiled during the previous most recent nomination cycles for the position in question.

(2) Where no list of previous candidates who have received the support of their Regulator exists for the vacated position, the Nominating Subcommittee shall follow the procedure for new appointments.

(3) In the event of a vacancy, the candidate selected to fill the vacancy shall be appointed for an initial term, which shall end on June 30 three (3) or more years after the appointment.

E. Reappointments

(1) When considering whether to recommend the reappointment of a current member for an additional term, the Nominating Subcommittee shall base its decision on the needs identified in the volunteer recruitment and succession plan, including the desired profile and the past performance of the member.

(2) The secretariat shall contact all members who are eligible for re-appointment to ask if they are willing to serve for another term, if selected. This message shall explain the process for re-appointment and clearly state that members may or may not be renewed based on many considerations as outlined in the process.

(3) The secretariat shall forward to the Nominating Subcommittee the names of all members who are interested in standing for re-appointment.

(4) The Nominating Subcommittee shall consider the performance of each member interested in re-appointment against the profile established in the volunteer recruitment and succession plan and decide if the re-appointment is justified.

(5) The Nominating Subcommittee shall distribute to all Regulators, annually, a list of the members licensed in their jurisdiction, and their current term. For those members whose terms are expiring and who are eligible for re-appointment, the Nominating Subcommittee shall also indicate if they are willing to serve and if the Nominating Subcommittee recommends re-appointment based on past performance.

(6) For members-at-large, all Regulators where the individual is licensed shall be asked to confirm their good standing. For members from the region(s), the Regulator(s) shall be asked to indicate whether it would support the re-appointment of the individual to the position. The Regulator does not need to provide any reasons for its decision.

(7) If Regulator support is not forthcoming, the member shall be informed that their term shall end without renewal and they shall be thanked for their service.

(8) If the Regulator supports the re-appointment, the Nominating Subcommittee shall then recommend the candidate to the Engineers Canada Board.

6.9.4 Process to appoint members to the CEAB Executive Committee

(1) The Engineers Canada Board shall approve all appointments to the CEAB Executive Committee.

(2) Following completion of their terms, the Vice-Chair becomes the Chair and the Chair becomes Past Chair, subject to the approval of the Engineers Canada Board.

A. Nominating

(1) The Nominating Subcommittee shall be responsible for conducting the nominations and elections process for the position of Vice-Chair.

(2) The Nominating Subcommittee shall, wherever possible, seek more than one candidate for the position of Vice-Chair.

(3) The chair of the Nominating Subcommittee shall issue an invitation to all members of the CEAB to declare their willingness to be considered for election to position of Vice-Chair, not less than two (2) months prior to the date of elections.

(4) Members willing to stand for election shall confirm their willingness and provide their Regulator's support in writing to the Nominating Subcommittee, not less than one (1) month prior to the date of election.

(5) Where no declarations of willingness are received, the Nominating Subcommittee shall determine how to fill the position(s).

(6) The names of all candidates for the position of Vice-Chair shall be distributed to the members of the CEAB at least two (2) weeks prior to the date of election.

B. Elections

(1) Elections to the position of Vice-Chair shall be determined by secret ballot voting by the members of the CEAB. Voting may take place using in-person or electronic ballots.

(2) Each member present at the meeting may cast one vote. Proxy votes are not permitted.

(3) Any spoiled ballots will be discarded, and any ballots cast after the election has closed will not be counted.

(4) The secretary of the CEAB and the CEQB observer at the meeting (or another neutral party agreed to by the Nominating Subcommittee) shall act as the scrutineers for the election.

(5) In the event only one candidate is nominated for the position of Vice-Chair, the Past Chair will cast a second ballot. The members shall vote and confirm their support for the candidate by indicating "yea" or "nay".

a) If the majority of the votes cast indicate “yea”, that candidate shall be declared elected.

b) In the event of a tie, the scrutineers shall open the Past Chair’s second ballot and use the vote therein.

c) If the majority of votes indicate “nay”, the Nominating Subcommittee shall seek new candidates and a new vote shall be conducted. The unsuccessful candidate shall not be eligible to stand for election for this re-vote.

d) If no other candidate is willing to let their name stand, the matter shall be referred to the Engineers Canada Board who shall have the authority to appoint someone, or to take whatever other action that they see fit to resolve the matter.

(6) In the event two candidates are nominated for Vice-Chair, the Past Chair will cast a second vote for one candidate.

a) If one candidate receives a majority of the votes, that candidate shall be declared elected.

b) In the event of a tie in the number of votes received, the scrutineers shall open the Past Chair’s second vote and use the vote therein.

(7) In the event of three or more candidates for Vice-Chair, members will submit a ranked ballot (also known as a preferential ballot), ranking every candidate listed on the ballot in the matter instructed by the scrutineers. Ballots will be considered spoiled and discarded if they do not rank every candidate, do not rank candidates in sequential order, or duplicate rankings. The senior Director appointee and the Past Chair of the CEAB shall each submit a second ranked ballot and place their ballot in a sealed envelope; these ballots shall only be examined and considered if required, as specified below.

a) If one candidate receives a majority (50% +1) of the first preference votes, that candidate shall be declared elected.

b) In the event no candidate has a majority of the first preference votes, the candidate receiving the lowest number of votes in any particular round shall be removed from consideration in future rounds and each ballot for that candidate will be reallocated to the highest ranked remaining candidate. This process will be repeated until one candidate receives a majority of the votes. If there are two candidates remaining and there is a tie, the scrutineers shall first open the Past Chair’s sealed envelope and declare as the winner the remaining candidate who is higher ranked on the Past Chair’s ballot. If there is still a tie (e.g. in the case of a spoiled ballot), the scrutineers shall open the senior Director appointee’s sealed envelope and declare as the winner the remaining candidate who is higher ranked on the senior Director appointee’s ballot. If there is still a tie, the scrutineers will select the winner by lot.

c) If, in any round, there is a tie in the lowest number of votes received by two or more candidates, the scrutineers shall first open the Past Chair’s sealed envelope and, of the tied candidates, remove the candidate with the lowest ranking on the Past Chair’s ballot from consideration in future rounds. If one candidate can still not be removed (e.g. in the case of a spoiled ballot), the scrutineers shall open the senior Director appointee’s sealed envelope and, of the tied candidates,

remove the candidate with the lowest ranking on the senior Director appointee's ballot from consideration in future rounds. If one candidate can still not be removed, the scrutineers will determine which of the tied candidates will be removed by lot.

(8) The scrutineers will report the name of the candidate who received the majority of the votes to the chair of the Nominating Committee. The scrutineers will not report the vote totals or whether the sealed envelopes were used.

(9) The chair of the Nominating Committee will thereafter announce the successful candidate.

(10) When the election is complete, the chair of the Nominating Committee will request a motion to destroy any in-person ballots. This may not be necessary where electronic ballots are used.

6.9.5 Engineers Canada appointments to the CEAB

The Engineers Canada Board appoints two Directors to the CEAB to act as "Director appointees". Director appointees serve for a two-year term and are appointed in alternate years to ensure continuity.

A. Responsibilities of the Director appointees

(1) The director appointees are the Engineers Canada Board's representatives on the CEAB. They serve a key role in helping the Engineers Canada Board to meet its responsibilities to:

"hold itself, its Directors and its Direct Reports accountable"

"provide ongoing and appropriate strategic direction"

(2) Director appointees shall attend all meetings of the CEAB.

(3) Director appointees provide advice and guidance to the CEAB regarding the Strategic Plan, Engineers Canada Board policy, and direction.

(4) Director appointees provide advice and guidance to the Engineers Canada Board on the work of the CEAB, and the performance of the Chair.

(5) The senior Director appointee (the Director with the longer term of service on the CEAB) serves as the chair of the Nominating Subcommittee.

(6) The senior Director appointee shall also attend the meetings of the Policies & Procedures Committee as an observer.

B. Authority of the Director appointees

(1) The Director appointees shall have voting rights on the CEAB and on any subcommittee to which they are appointed.

(2) Engineers Canada Director appointees may attend meetings of the subcommittees of CEAB as observers.

C. Restrictions on the Director appointees

The Chair of the CEAB reports to the Board as a whole. Director appointees have no authority to direct the CEAB.

6 Engineers Canada Board committees and Task Forces

6.10 Canadian Engineering Qualifications Board (CEQB)

Date of adoption: April 9, 2018 (Motion 5693)	*Review period: Annual*
Date of latest amendment: May 27, 2022 (Motion 2022-05-4D)	*Date last reviewed: May 27, 2022*

6.10.1 Terms of reference

The CEQB enhances the Engineers Canada Board's effectiveness and efficiency on matters related to qualifications for, and the practice of, engineering.

A. Purpose/products

(1) The CEQB provides services and tools to Regulators through the Engineers Canada Board that enable the assessment of engineering qualifications, foster excellence in engineering practice and regulation, and facilitate mobility of practitioners within Canada.

(2) The CEQB provides research, guidelines, papers, and other guidance related to:

a) Admissions;

b) Foreign credential recognition;

c) The professional practice examination;

d) Engineers-in-training;

e) Continuing competence and professional development;

f) Practice of engineering;

g) Sustainability and the environment;

h) The code of ethics; and,

i) Other issues of national importance as identified by the Regulators.

All work is developed in cooperation with the Regulators as per policy 9.2, *Qualifications Board Guidelines*.

(3) The CEQB maintains the Syllabus of Examinations for candidates from programs other than CEAB-accredited or -recognized programs. CEAB-recognized programs are those programs located outside of Canada that the CEAB has evaluated and found to be substantially equivalent.

B. Authority

(1) The CEQB's authority enables it to assist the Engineers Canada Board in its work. In addition to the authority granted through Policy 6.1, *Board Committees and Task Forces,* the CEQB may also:

a) Establish Committees and Task Forces to assist in carrying out its work;

b) Deal directly with organizations and individuals;

c) Approve examination syllabi; and,

d) Maintain internal procedures for work such as document development and maintenance, communications, consultations, etc.

(2) The CEQB has no authority to:

a) Change Engineers Canada Board policies;

b) Enter into financial agreements; or,

c) Spend or commit organization funds, unless such funds are specifically allocated by the Engineers Canada Board.

C. Composition

(1) The CEQB is composed of the Chair, the Vice-Chair and the Past Chair and shall include one member from each of the following regions:

- British Columbia
- Alberta
- Saskatchewan or Manitoba
- Ontario
- Quebec
- Newfoundland, Prince Edward Island, Nova Scotia, or New Brunswick

and should include one member from:

- Yukon, the Northwest Territories, or Nunavut

(2) The CEQB also includes members-at-large. The total number of members is based on the anticipated future workload.

(3) Two Directors of the Engineers Canada Board shall be appointed to the CEQB by the Board.

(4) All members of the CEQB must be licensed engineers in Canada.

(5) Quorum shall be set at 50% of the members +1.

(6) The Chair, the Vice-Chair, and the Past Chair constitute the Executive Committee of the CEQB.

(7) The membership of the CEQB shall ideally be composed of:

a) 1/3 of its members either currently or formerly employed as a faculty member at a higher education institution; and,

b) 2/3 of its members either currently or formerly engaged in the practice of professional engineering as described below.

(8) For the portion of the membership that is from outside of the field of academia, consideration should be given to candidates having one or more of the following attributes:

a) Experience in the technical review of professional engineering work prepared by others;

b) Experience in the hiring, supervision, mentorship, or development of engineers-in-training or recently licensed engineers; or,

c) Experience as an employee of a government agency, crown corporation, or regulatory authority, in the review and/or approval of professional engineering work prepared by others.

(9) In the selection of members for the CEQB, consideration is given to appointing individuals who are serving or have served on a board of examiners (or its equivalent) and to maintaining representation from various engineering disciplines.

(10) In the selection of members for the CEQB, every reasonable effort shall be made to achieve a diverse membership, representative of the Canadian population. In so doing, Regulators will be encouraged to consider making appointments which result in the CEQB:

a) including at least 30% women, with a long-term goal of gender parity, representative of the Canadian population; and,

b) Including perspectives from Indigenous, Black, people of colour, and internationally educated engineers.

(11) The CEQB may invite observers to its meetings, including a member of the CEAB. Observers do not have voting rights.

(12) The CEQB secretariat, appointed by the CEO, supports the CEQB and its members are non-voting participants in meetings of the CEQB and its subcommittees.

D. Term limits

(1) The term of appointment to the CEQB shall be for a period of three (3) years. Members may, subject to the approval of the Engineers Canada Board, be reappointed for an additional three-year term, for a total of up to six (6) years of total service.

(2) The foregoing term limits shall not apply to a member who is elected or confirmed, as applicable, to hold office as Vice-Chair, Chair, or Past Chair prior to the expiration of their second term, in which case they may continue until they have finished serving as Past Chair.

(3) The Engineers Canada Board may, under exceptional circumstances, extend the term of appointment for a member of the CEQB beyond the six-year limit, up to a maximum of nine (9) years total service on the CEQB. For such an extension to be considered, the rationale must be provided to the Engineers Canada Board.

(4) The term of office for the positions of Vice-Chair, Chair, and Past Chair of the CEQB shall be for ~~one (1)~~two (2) years.

E. Planning

(1) The CEQB is responsible for the preparation of a work plan and a volunteer recruitment and succession plan and will operate within those plans.

a) The CEQB shall produce and maintain a work plan that includes a list of the ongoing work and identifies the volunteer resources needed to accomplish the work.

b) The CEQB shall maintain a list of its members, including appointment dates and positions. This information shall be used as the basis for the preparation of a volunteer recruitment and succession plan that identifies the desired profiles for new appointments.

(2) The plans must be submitted annually to the Engineers Canada Board for approval.

6.10.2 Role of the Chair of the CEQB

The Chair of the CEQB is crucial to the success of Engineers Canada. The Chair is directly accountable to the Engineers Canada Board for the achievements of the CEQB.

A. Responsibilities

(1) The Chair works closely with the secretariat and other Engineers Canada staff, and provides leadership to the CEQB in the delivery of valuable services, products, and tools for the Regulators. In addition to the responsibilities required of all Chairs in Policy 6.1, *Board Committees and Task Forces,* the CEQB Chair is also responsible for:

a) Chairing their Executive Committee and participating on the Nominating Subcommittee;

b) Reviewing the volunteer recruitment and succession plans, as developed by the secretariat;

c) Reviewing the budget (as developed by the secretariat) and working with the Engineers Canada CEO to deliver on their work plan within the Board-approved Budget and resource constraints;

d) Working with the Engineers Canada CEO and the secretariat to develop interim performance assessment reports and the annual performance report for the Engineers Canada Board and the Regulators;

e) Attending meetings of the Engineers Canada Board;

f) Contributing to the development, implementation, and achievement of Engineers Canada's Strategic Plan;

g) Being knowledgeable of and working to support the delivery of the work of the CEQB; and,

h) Ensuring that members behave consistently with their own rules and those imposed upon them from the Engineers Canada Board including endeavoring to establish consensus on issues and objectives while maintaining a national perspective.

B. Competencies

To deliver on these responsibilities, the Chair should demonstrate the skills, knowledge, and abilities defined for all Committee Chairs in Policy 6.1, *Board Committees and Task Forces*. In addition, the CEQB Chair should have a demonstrated knowledge of engineering regulation and practice, and an understanding of the application of the CEQB's processes.

6.10.3 Process to appoint members to the CEQB

A. General requirements

(1) The Nominating Subcommittee shall ensure that Regulators have sufficient time to process potential candidate requests within their own jurisdictional policies and procedures.

(2) The Nominating Subcommittee shall not consider, nor recommend to the Engineers Canada Board, any candidates who do not receive the support of their Regulator(s).

(3) The procedures outlined below shall be followed in the order they are written.

(4) All appointments to the CEQB shall be subject to the approval of the Engineers Canada Board.

B. Nominating Subcommittee

(1) The Nominating Subcommittee of the CEQB shall consist of the Chair, Past Chair, and the two Director appointees. The senior Director appointee shall serve as Chair of the Nominating Subcommittee.

(2) The Director appointees shall have voting privileges on the Nominating Subcommittee. All candidates must receive majority support of Nominating Subcommittee. Any tied vote of the Nominating Subcommittee is a failed motion.

(3) All information considered by the Nominating Subcommittee shall be kept confidential.

C. New appointments and vacancies

(1) The Nominating Subcommittee must always select from amongst the candidates approved by the Regulators, the candidate who, in the Nominating Subcommittee's opinion, would best fit the desired profile.

(2) The Nominating Subcommittee shall contact the candidate to confirm their willingness to serve if they are appointed by the Engineers Canada Board.

(3) The Nominating Subcommittee shall recommend the selected candidate to the Engineers Canada Board.

(4) The Nominating Subcommittee shall contact all unsuccessful candidates to thank them for their expression of interest, explain the selection process, and indicate that their expression of interest shall be retained for consideration in case of any future vacancies.

(5) In addition to these requirements, the Nominating Subcommittee shall complete the following steps for all types of nominations:

a) Members from the regions

i. Each Regulator in the region shall be provided with the desired profile of the candidate(s) being sought.

ii. Each Regulator within the region shall be asked to provide the names of up to three (3) candidates whom they would support for the position. The Regulators shall be asked to indicate their preference, or the rank of all candidates, if desired. All information will be considered in confidence by the Nominating Subcommittee.

b) Members-at-large

i. All of the Regulators shall be provided with the desired profile of the candidate(s) being sought.

ii. Each Regulator shall be invited to submit the names of candidates they would support for the position. The Regulators may submit as many names as they like. The Regulators shall be asked to indicate their preference, or the rank of all candidates, if desired. All information will be considered in confidence by the Nominating Subcommittee.

iii. The Nominating Subcommittee shall also prepare and publish a call for expressions of interest which shall be posted on Engineers Canada's website and in its newsletter, and distributed to other, relevant stakeholders, as identified by the Nominating Subcommittee. The call for expressions of interest shall include the desired profile of the candidates being sought.

iv. The names of all qualified candidates submitted to the Nominating Subcommittee by groups or individuals other than the Regulators shall be forwarded to all Regulators where

the candidate is licensed, and those Regulators shall be asked to identify which of those candidates they would support for the position.

D. Vacancies

(1) In the event of a vacancy occurring on the CEQB mid-year and/or prior to the completion of a term of office, the Nominating Subcommittee shall select from amongst the list of candidates provided by the Regulators and from those candidates who have received confirmation of support from their Regulators, that were compiled during the previous most recent nomination cycles for the position in question.

(2) Where no list of previous candidates who have received the support of their Regulator exists for the vacated position, the Nominating Subcommittee shall follow the procedure for new appointments.

(3) In the event of a vacancy, the candidate selected to fill the vacancy shall be appointed for an initial term, which shall end on June 30 three (3) or more years after the appointment.

E. Re-appointments

(1) When considering whether to recommend the re-appointment of a current member for an additional term, the Nominating Subcommittee shall base its decision on the needs identified in the volunteer recruitment and succession plan, including the desired profile and the past performance of the member.

(2) The secretariat shall contact all members who are eligible for re-appointment to ask if they are willing to serve for another term, if selected. This message shall explain the process for re-appointment and clearly state that members may or may not be renewed based on many considerations as outlined in the process.

(3) The secretariat shall forward to the Nominating Subcommittee the names of all members who are interested in standing for re-appointment.

(4) The Nominating Subcommittee shall consider the performance of each member interested in re-appointment against the profile established in the volunteer recruitment and succession plan and decide if the re-appointment is justified.

(5) The Nominating Subcommittee shall distribute to all Regulators, annually, a list of the members licensed in their jurisdiction, and their current term. For those members whose terms are expiring and who are eligible for re-appointment, the Nominating Subcommittee shall also indicate if they are willing to serve and if the Nominating Subcommittee recommends re-appointment based on past performance.

(6) For members-at-large, all Regulators where the individual is licensed shall be asked to confirm their good standing. For members from the region(s), the Regulator(s) shall be asked to indicate

whether it would support the re-appointment of the individual to the representative position. The Regulator does not need to provide any reasons for its decision.

(7) If Regulator support is not forthcoming, the member shall be informed that their term shall end without renewal and they shall be thanked for their service.

(8) If the Regulator supports the re-appointment, the Nominating Subcommittee shall then recommend the candidate to the Engineers Canada Board.

6.10.4 Process to appoint members to the CEQB Executive Committee

(1) The Engineers Canada Board shall approve all appointments to the CEQB Executive Committee.

(2) Following completion of their terms, the Vice-Chair becomes the Chair and the Chair becomes Past Chair, subject to the approval of the Engineers Canada Board.

A. Nominating

(1) The Nominating Subcommittee shall be responsible for conducting the nominations and elections process for the position of Vice-Chair.

(2) The Nominating Subcommittee shall, wherever possible, seek more than one candidate for the position of Vice-Chair.

(3) The Chair of the Nominating Subcommittee shall issue an invitation to all members of the CEQB to declare their willingness to be considered for election to position of Vice-Chair, not less than two (2) months prior to the date of elections.

(4) Members willing to stand for election must confirm their willingness and provide their Regulator's support in writing to the Nominating Subcommittee, not less than one (1) month prior to the date of election.

(5) Where no declarations of willingness are received, the Nominating Subcommittee shall determine how to fill the position(s).

(6) The names of all candidates for the position of Vice-Chair shall be distributed to the members of the CEQB at least two (2) weeks prior to the date of election.

B. Elections

(1) Elections to the position of Vice-Chair shall be determined by secret ballot voting by the members of the CEQB. Voting may take place using in-person or electronic ballots.

(2) Each member present at the meeting may cast one vote. Proxy votes are not permitted.

(3) Any spoiled ballots will be discarded, and any ballots cast after the election has closed will not be counted.

(4) The secretary of the CEQB and the CEAB observer at the meeting (or another neutral party agreed to by the Nominating Subcommittee) shall act as the scrutineers.

(5) In the event only one candidate is nominated for the position of Vice-Chair, the Past Chair will cast a second ballot. The members shall vote and confirm their support for the candidate by secret ballot, indicating "yea" or "nay".

a) If the majority of the votes cast indicate "yea", that candidate shall be declared elected.

b) In the event of a tie, the scrutineers shall open the Past Chair's ballot and use the vote therein.

c) If the majority of votes indicate "nay," the Nominating Subcommittee shall seek new candidates and a new vote shall be conducted. The unsuccessful candidate shall not be eligible to stand for election for this re-vote.

d) If no other candidate is willing to let their name stand, the matter shall be referred to the Engineers Canada Board who shall have the authority to appoint someone, or to take whatever other action that they see fit to resolve the matter.

(6) In the event two candidates are nominated for Vice-Chair, the Past Chair will cast a second vote for one candidate.

a) If one candidate receives a majority of the votes, that candidate shall be declared elected.

b) In the event of a tie, the scrutineers shall open the Past Chair's second ballot and use the vote therein.

(7) In the event of three or more candidates for Vice-Chair, members will submit a ranked ballot (also known as a preferential ballot), ranking every candidate listed on the ballot in the matter instructed by the scrutineers. Ballots will be considered spoiled and discarded if they do not rank every candidate, do not rank candidates in sequential order, or duplicate rankings. The senior Director appointee and the Past Chair of the CEQB shall each submit a second ranked ballot and place their ballot in a sealed envelope; these ballots shall only be examined and considered if required, as specified below.

a) If one candidate receives a majority (50% +1) of the first preference votes, that candidate shall be declared elected.

b) In the event no candidate has a majority of the first preference votes, the candidate receiving the lowest number of votes in any particular round shall be removed from consideration in future rounds and each ballot for that candidate will be reallocated to the highest ranked remaining candidate. This process will be repeated until one candidate receives a majority of the votes. If there are two candidates remaining and there is a tie, the scrutineers shall first open the Past Chair's sealed envelope and declare as the winner the remaining candidate who is higher ranked on the Past Chair's ballot. If there is still a tie (e.g. in the case of a spoiled ballot), the scrutineers shall open the senior Director appointee's sealed envelope and declare as the winner the

remaining candidate who is higher ranked on the senior Director appointee's ballot. If there is still a tie, the scrutineers will select the winner by lot.

c) If, in any round, there is a tie in the lowest number of votes received by two or more candidates, the scrutineers shall first open the Past Chair's sealed envelope and, of the tied candidates, remove the candidate with the lowest ranking on the Past Chair's ballot from consideration in future rounds. If one candidate can still not be removed (e.g. in the case of a spoiled ballot), the scrutineers shall open the senior Director appointee's sealed envelope and, of the tied candidates, remove the candidate with the lowest ranking on the senior Director appointee's ballot from consideration in future rounds. If one candidate can still not be removed, the scrutineers will determine which of the tied candidates will be removed by lot.

(8) The scrutineers will report the name of the candidate who received the majority of the votes to the Chair of the Nominating Committee. The scrutineers will not report the vote totals or whether the sealed envelopes were used.

(9) The Chair of the Nominating Committee will thereafter announce the successful candidate.

(10) When the election is complete, the Chair of the Nominating Committee will request a motion to destroy any in-person ballots. This may not be necessary where electronic ballots are used.

6.10.5 Engineers Canada appointments to the CEQB

The Board appoints two Directors to the CEQB to act as "Director appointees". Director appointees serve for a two-year term and are appointed in alternate years to ensure continuity.

A. Responsibilities of the Director appointees

(1) The Director appointees are the Engineers Canada Board's representatives on the CEQB. They serve a key role in helping the Engineers Canada Board to meet their responsibilities to:

"hold itself, its Directors and its Direct Reports accountable"

"provide ongoing and appropriate strategic direction"

(2) Director appointees shall attend all meetings of the CEQB.

(3) Director appointees provide advice and guidance to the CEQB regarding the Strategic Plan, Engineers Canada Board policy, and direction.

(4) Director appointees provide advice and guidance to the Engineers Canada Board on the work of the CEQB, and the performance of the Chair.

(5) The senior Director appointee serves as the Chair of the Nominating Subcommittee.

B. Authority of the Director appointees

(1) The Director appointees shall have voting rights on the CEQB and on any subcommittee to which they are appointed.

(2) Engineers Canada Director appointees may attend meetings of the subcommittees of CEQB as observers.

C. Restrictions on the Director appointees

The Chair of the CEQB reports to the Board as a whole. Director appointees have no authority to direct the CEQB.

7 Board policies

7.1 Board, committee, and other volunteer expenses

Date of adoption: April 9, 2018 (Motion 5693) *Review period: Biennial*
Date of latest amendment: February 24, 2021 (Motion # 2021-02-7D) *Date last reviewed: February 24, 2021*

~~(1)~~ This policy applies to Engineers Canada Board members, Board committee members, and select other ~~volunteers~~ participants (collectively, "volunteers") who travel and/or incur travel-related expenses, including to attend or participate in meetings, events, and conferences ("events") in the course of carrying out Engineers Canada business.

~~(2)~~(1)

~~(3)~~(2) The purpose of this policy is to ensure volunteers have a clear understanding of the guidelines, policy, and procedures around travel and the incursion of travel-related expenses, including the kind and method of business travel that is considered appropriate, in what circumstances pre-approval is required, and how travel-related expenses should be claimed.

7.1.1 Board and Board committee member~~s~~ expenses

(1) Volunteers shall be reimbursed for all reasonable expenses ~~costs~~ associated with travel, accommodation, meals and other miscellaneous expenses incurred while conducting ~~for~~ Engineers Canada business. Volunteers are accountable to determine the most practical methods of travel.

(2) Expenses incurred for volunteers' attendance at meetings called by their Regulator, for which the Board Director is the appointed Director, shall not be reimbursed.

(3) Expenses for the President's guest (or for the guest of the President's designate when the President is unable to attend) will be reimbursed when the President or designate attends a Regulator annual meeting, annual general meeting, or Geoscientists Canada annual meeting where guests are invited.

(4) ~~Travel~~ Reasonable expenses associated with travel for the one guest of Board members may be reimbursed for attendance at only the annual meeting of members and the Board retreat.

(5) Transportation costs will be reimbursed as appropriate for the situation.

7.1.2 Regulator presidents' expenses

Upon request, Engineers Canada shall reimburse (in accordance with this policy) travel-related expenses in excess of $1,500 for presidents of Regulators with less than 2,500 registrants to attend Board meetings to which presidents are invited to attend.

7.1.3 Exceptional travel

(1) For any travel not included in Engineers Canada's approved b~~B~~udget ~~international travel and travel within Canada,~~ pre-approval by the President or their delegate is required. ~~before exceptional travel not included in Engineers Canada's approved Budget.~~

~~(2) Volunteers shall follow the standards set out in section 7.1.4, and are individually responsible for complying with this policy and are expected to exercise good business judgment when determining travel plans.~~

7.1.4 Acceptable travel-related expenses

A. Airfare

(1) Tickets should be purchased as early as possible to take advantage of the lowest fares, following the call of ~~the~~ an event.

(2) Lowest economy class airfare that allows for one piece of checked luggage should be used where available and practical. Engineers Canada's Corporate Rewards program should be used where practical. ~~Board v~~Volunteers will be reimbursed in cases where they have purchased flights to attend ~~Engineers Canada~~ events, where they must cancel due to an emergency.

(3) When flying time is ~~six~~ four (~~6~~4) hours or more for any single leg of the trip, purchasing lowest-cost business class fare is permitted.

(4) Checked and carry-on baggage fees and trip-cancellation insurance are eligible for reimbursement.

B. Rail

(1) Tickets should be purchased as early as possible to take advantage of the lowest fares.

(2) The standard for rail travel is business class.

C. Buses, taxis, and ride-share

(1) Reasonable bus, taxi, or ride-share fares shall be reimbursed.

(2) Limousine service is discouraged unless it is more economical than taxi fare.

D. Rental vehicles

(1) Volunteers may travel by rental vehicle when it is more cost-effective or efficient than air, train, taxis, or personal vehicles (e.g. short trips, or where sharing makes renting a vehicle more attractive), including where:

a) Taxi/limousine service is not available or cost effective;
b) Location of the event is not easily accessible from a major airport; and,
c) Large quantities or materials are being delivered to an event location by the volunteer.

(2) Volunteers who travel by rental vehicle shall be reimbursed for collision insurance and gasoline. The approved car rental category is mid-size, although free upgrades are permitted. When necessary, larger vehicles or vehicles with special requirements may be rented to transport excess baggage OR large items such as displays, or to accommodate medical reasons.

(3) If, due to personal preference, a traveller opts to rent a vehicle instead of using other means of transport to attend an event, the maximum amount payable will be the equivalent of the taxi fare ~~to and from~~between the airport ~~to~~and the location of the event and the cost of airfare, combined.

Commented [LG1]: As discussed at the Governance Committee meeting and also considered by the FAR committee meeting in December. It is anticipated that this policy change will bring with it an additional annual cost of between $229,711 and $287,138 depending on whether it was included for staff and locations of the meeting.

E. Personal vehicles

~~(1) Personal vehicles may be used when overall economy is ensured.~~

~~(2)~~(1) Volunteers who travel by personal vehicle may claim the Canadian Government k~~K~~ilometric rates ~~Revenue Agency (CRA) automobile allowance rates~~ in effect at the time of travel, ~~or~~ to the equivalent of the taxi fare between the airport and the location of the event and the cost of airfare, combined~~total travel costs of economy airfare, whichever is less~~.

~~(3)~~(2) Engineers Canada is not responsible or liable for any costs or damages incurred above and beyond the rate per kilometer reimbursement. It is the responsibility of the individual volunteer to ensure adequate insurance coverage for business use of personal vehicles.

F. Parking, tolls, and tickets

(1) Reasonable parking and toll expenses will be reimbursed.

(2) Traffic and parking violations incurred while travelling on Engineers Canada business are not eligible for reimbursement.

G. Accommodations

(1) Engineers Canada will either pay or reimburse for reasonable accommodations that reflect the purpose and circumstances when travelling~~directly or reimburse accommodation for costs reasonable for the situation~~.

(2) Where events are arranged by Engineers Canada, group rates shall be secured and volunteers ~~travellers~~ advised accordingly. In cases where volunteers select accommodations that exceed the room costs negotiated as part of the group rate, they shall be responsible to pay the difference in costs above the group rate. Original hotel invoices should be submitted with expense claims.

(3) If the ~~traveller~~ volunteer makes arrangements to reside in accommodations other than in ~~a~~ the hotel designated by Engineers Canada, reasonable expenses will be reimbursed provided the overall expenses do not exceed the cost of hotel accommodation as secured through Engineers Canada group rates, if applicable.

(4) When private accommodation is provided to a volunteer without charge, a gift of appreciation other than cash to the host may be provided. The maximum value of such gift is $50 per night.

H. Meals

(1) ~~Volunteers may, during business travel, incur the costs of meals.~~ Meal costs (including incidental expenses) will be reimbursed ~~on receipts.~~in accordance with t~~T~~he current Canadian Government guidelines. Receipts are not required.~~on expenses provide a reference point for reasonable expenses.~~

~~(2) Additional costs may be reimbursed on~~ in ~~reasonable circumstances.~~

~~(3)~~(2) If a meal is included in the cost of an event, transportation, or accommodation, or is already being provided by Engineers Canada (e.g. if breakfast is provided as part of a conference), the volunteer will not be reimbursed for ~~additional expenses~~any costs related to those included meals.

~~(4) Receipts for all meals must be attached to the expense claim form.~~

I. Spousal or partner travel

Expenses for partners or guests of volunteers will not normally be reimbursed, unless as stipulated in 7.1.1(4), above.

J. Childcare expenses

Reasonable additional expenses for childcare services are reimbursed when such services are specifically required by ~~persons~~ volunteers travelling on Engineers Canada business. ~~The maximum amount payable to any traveller volunteer in a calendar year shall be limited to $1,500.~~

K. Medical insurance

Engineers Canada will reimburse ~~travellers~~ volunteers who are travelling internationally for any additional medical coverage purchased to ensure medical protection while on Engineers Canada business. Costs for medical services required for international travel will also be reimbursed.

L. Traveller accident insurance

Any claim made by or on behalf of a ~~traveller~~ volunteer under Engineers Canada's traveller accident insurance policy for accidental injury or death must be presented to the insurer by Engineers Canada within 30 days of the accident. A claim must have medical evidence from a licensed physician selected by Engineers Canada and be in agreement with a licensed physician as selected by the insurer. Claimants must communicate and comply in a timely manner to enable Engineers Canada time to present the claim to the insurer.

M. Combining personal with business travel

Personal travel may be combined with Engineers Canada business travel provided there is no additional cost to Engineers Canada.

7.1.5 Expense reimbursement

(1) Expenses shall be reimbursed within 30 days of receipt of the approved expense claim when proper documentation~~, including required original receipts,~~ has been provided as applicable. Incurred expenses shall also be reimbursed under a force majeure event such as global pandemic.

(2) Claims should be made within ~~14~~ 30 days of ~~travel~~incurring the expenses. Engineers Canada is not required to reimburse for claims received more than three months from the date ~~of travel~~the expenses were incurred.

7.1.6 Approval of expense claims

(1) All expense claims are initially examined by the financial staff at Engineers Canada for completeness and adherence to policy. Those submitting expense claims may be asked to complete, correct and/or clarify expense claim details. If expense claim items remain unresolved, these items will be brought to the attention of the individual authorized to provide final approval of the expense claim.

(2) The final authority for the approval of expense claims ~~submitted by the following is~~is as follows:

a) For the CEO: Approval by the President
b) For the President: Approval by the President-Elect
c) For Directors~~, including the Past President~~: Approval by the CEO
d) For ~~Members~~ Board committee members, including members of the CEAB and CEQB: Approval by the CEO
e) ~~O~~For other ~~volunteers~~participants: Approval by the CEO
f) For Engineers Canada Staff: Approval by the CEO

(3) The President will have final approval in the event that any issues arise within this approval process for volunteers.

BRIEFING NOTE: For information

Board self-assessment report	4.5
Purpose:	To review the results of the 2023 Board self-assessment survey
Link to the Strategic Plan / Purposes	Board Responsibility: To hold itself, its Directors, and Direct Reports accountable Board Responsibility: To provide continuing Board development to Directors
Link to Corporate Risk Profile:	Decreased confidence in the governance functions (Board risk)
Prepared by:	Joan Bard Miller, Manager, Governance and Board Services
Presented by:	Mike Wrinch, Director from British Columbia and Chair, HR Committee

Background

- Board self-assessment is conducted annually, in accordance with Board policy 4.12 *Board self-assessment* and 4.13, *Individual Director Assessment.* This practice gives Directors the opportunity to reflect on performance and potential improvements.
- These assessments also provide valuable information to the HR Committee, which is charged with making recommendations to the Board regarding Director training and professional development.
- Engineers Canada's 2023 budget has been set. Any new Director training/education would need to be planned and budgeted by staff for 2024.
- For this year's survey, external consultant, *tng*, merged Engineers Canada's prior assessment questions with its own standard question bank from which the survey results could be benchmarked against available best-practice.
- The survey consisted of two parts: 1) Board assessment, and 2) Individual Director and peer assessment.
- Engineers Canada's Board approved the assessment survey content at its meeting on February 23, 2023.The HR Committee is charged with reviewing the results of the survey and determining if any action or improvements are necessary.

Status update

- The survey was circulated to current Directors on February 27 and remained open until March 13.
- Nineteen out of 23 Directors completed this year's survey.
- The HR Committee discussed the survey results as summarized by *tng* and recommended that the summary report be shared with the Board at its meeting in May for information and discuss the issues identified in the report during its Strategic Workshop in June. The report is included in appendix 1.
- Overall, the benchmarked results were positive and indicated that Engineers Canada is governing at a high level. Highlights of the results are summarized on pages 7-8.
- Individual Director self and peer assessment reports have been provided confidentially by *tng* to the President-Elect for distribution and will *not* be shared with either the HR Committee or Board. Directors will have the opportunity to discuss their personal results with either the President-Elect or *tng*.

Next steps

- The Board will have the opportunity to discuss the survey findings with the consultant, *tng,* at its strategic workshop in June 2023.

Appendices

- **Appendix 1:** 2022-2023 Board Assessment Summary Report
- **Appendix 2:** Verbatim Respondent Comments Per Question (circulated to Directors only)

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Engineers Canada
2022 Board Assessment Summary Report

Prepared confidentially for

Engineers Canada Human Resource Committee

Report Preparation Date: March 16th, 2023

Prepared by tng
Governance & Leadership Advisors
www.tngleaders.com

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Introduction

Intention: Beyond "compliance" to "performance excellence"

Conscientious boards realize that:

- Complying with legal and regulatory requirements is the beginning, not the end of governance
- Members & stakeholders demand more rigour, discipline and transparency from their boards
- Directors require clearer expectations and guidelines from their organizations
- The best organizations and boards attend to their "performance" and "compliance" responsibilities in a strategic, integrated and consistent manner.

Board Accountability

In addition to being responsible for stewarding the organization as a whole, the board is a self-accountable unit of the organization that must focus on:

- Auditing & satisfying its own compliance requirements
- Measuring & monitoring its own performance as a governing body
- Setting & pursuing goals for continuous improvement

It is good governance for boards to conduct an annual assessment of their governing practices and standards. The annual assessment provides a timely and practical opportunity to:

- ***orient / reorient*** directors to the board's governance framework, principles, practices and benchmarks
- ***educate*** directors about the board's expectations for governing and contributing together
- ***measure*** the board's progress towards important governance goals and identify gaps worth addressing in the coming year
- ***engage*** board members in an objective and robust dialogue about board effectiveness
- ***plan*** what, how and when the board will evolve its governance practices and systems
- ***develop*** the capability and capacity of the board and its directors to contribute fully and appropriately to the achievement of the organization's mission

This good governance practice can be significantly enhanced when accompanied with credible, objective, external perspectives and proven tools.

Acknowledgment

The Engineers Canada Board is to be commended for engaging in a robust and objective Board Assessment as described above. This discipline supports Engineers Canada's goal of fostering high-performance Board.

Brad Quinn
Founder & CEO
brad@tngleaders.com

Survey Details

For the 2022 evaluation period, Engineers Canada introduced a new, best-practice Board Assessment survey. The survey places emphasis on 'how' the Board is performing using governance policies and practices it has adopted over recent years.

The assessment was based on thirty-five (35) best-practice governance standards. They were further tailored for Engineers Canada.

The Board Assessment was conducted using Survey Monkey's web-based survey tool. Responses were gathered between February 27th, 2023 and March 13th, 2023.

The **Qualitative assessment** enabled each respondent to assess how they observed the Engineers Canada governance system 'in action' over the year. Available responses included:

- **Unacceptable** - This response indicates that you believe the Engineers Canada Board is failing in this practice.
- **Needs Improvement** - This response indicates that you believe the Engineers Canada Board is only somewhat effective in this practice and needs to improve.
- **Acceptable** - This response indicates that you believe the Engineers Canada Board is performing this practice at a satisfactory level.
- **Good** - This response indicates that you believe the Engineers Canada Board is performing well and often above a satisfactory level.
- **Excellent** - This response indicates that you believe the Engineers Canada Board is performing at a consistently high level.
- **Not able to Rate** - This response indicates that you do not have sufficient first-hand information or experience to rate the performance of the practice.

Survey respondents were encouraged to provide **open text comments** on each question as they completed the qualitative assessment.

Survey respondents were also asked to provide answers on a few **open-ended questions** related to opportunities to enhance Board performance.

19 Engineers Canada Directors completed the survey.

Arjan Arenja	Nicolas Turgeon
John Van der Put	Anne Baril
Alison Anderson	Dawn Nedohin-Macek
Marlo Rose	Christian
Tim Joseph	Marisa Sterling
Victor Benz	Geoffrey Connolly
Sudhir Jha	Ann English
Michael Wrinch	Danny Chui
Maxime Belletete	Ernest Barber
Darlene Spracklin-Reid	

The results herein present the aggregated survey responses from all respondents.

Acting on Assessment Results

The Board's primary function is monitoring and decision-making in service to Engineers Canada and its stakeholders. As a self-accountable unit of the organization, the Board is also responsible for continually improving the effectiveness and efficiency of the governance system.

The results of this new Board Assessment are a catalyst for the Board to dialogue, decide and act on issues important to the Board, and therefore, to Engineers Canada and its stakeholders.

Steps to Make the Most of the Assessment

Following are some suggestions for making the most of the assessment results. These steps should be undertaken by the Human Resources Committee in preparing recommendations for the Board's approval.

1. Read the entire report, all the way through, to get an overall sense or 'feel' for the feedback before deep diving into the data and comments.
2. Look at the data next. 75% is the threshold that has been set to draw attention to results. These are colour coded for quick reference. The 75% threshold has been applied to **two groups of ratings**. The two groups of ratings are represented in separate columns for easy comparison.
    - Areas receiving ratings of '**acceptable**, good & excellent'
        i. Attend first to the areas receiving less than 75%
    - Areas receiving ratings of 'good & excellent"
        i. Attend next to areas receiving less than 75%
3. Review the comments provided for ANY area that is below the 75% threshold. These comments may provide more insight or 'texture' to why the area was rated low(er).
4. Consider what factors may be contributing to the low(er) rating, e.g.,
    - Known policy or practice deficiencies that have not been fully resolved
    - Recent changes to policy or practice that may not yet have 'settled in'
    - Lack of communication or access to information that may have influenced how confidently a respondent could rate the area
    - Other know barrier
5. Where known factors (like those above) are significant, work first to offset them to close the knowledge-gap or clear up any misconceptions.

6. Where there are NO known factors, seek to explore more fully what might be contributing to the lower ratings. Inquire with Directors for more detailed input. Add to Board generative discussion.
7. Add or amend remedies in the governance workplan, for Board Approval.
8. Implement, monitor progress, report, and document completion of the governance workplan.
9. Reassess the Board's performance annually to track improvement.
10. Refine remedies and governance workplan as required to achieve/sustain improved ratings.

Executive Summary

Performance at a Glance

For benchmarking purposes, ***tng*** uses the Good + Excellent group of performance ratings

Overall, the Board is performing at a high-level, functioning above the 75% rating threshold in four of the six major categories, as indicated in the table below.

When benchmarked against ***tng***'s list of high-performance board clients, Engineers Canada is performing at or above the 50% percentile in all but one major area, that being CULTURE.

Categories of Questions	2022 Level of Performance	2022 Benchmarking Percentile	2022 Level of Performance
	(Good + Excellent)	(Good + Excellent)	(Acceptable + Good + Excellent)
PEOPLE: "ensuring capable and prepared directors"	71.05%	50th	85.09%
STRUCTURE: "ensuring clear & supportive structures"	83.34%	50th	93.86%
PROCESS: "ensuring reliable and enabling processes"	84.21%	60th	96.49%
CULTURE: "ensuring a healthy and sustainable culture"	73.69%	30th	92.63%
BOARD DYNAMICS: "creating and sustaining positive working dynamics"	85.26%	50th	97.89%
DIRECTOR CONTRIBUTION: "acts ethically, responsibly and solely in the best interest of Engineers Canada"	83.46%	60th	93.24%
	(Very Familiar)	(Very Familiar)	(Mostly + Very Familiar)
Familiarity with the organization's guiding governance documents	36.84%	30th	94.73%

As subsequent more detailed tables will illustrate, of the 35 individual standards rated, there is **no area where the Board feels it is performing below Acceptable**.

A review of the summary level questions, #5, #6, #7 and #8 below, indicates that the Board feels it is operating **adequately** with no single question falling below the 75% threshold (Adequately + Very). When using the highest-level performance rating, VERY, results show that there is opportunity for the Board to increase its of performance in each area.

Question	Level of Agreement 2022	Level of Familiarity 2022
	(Very)	(Adequately + Very)
Q5. Overall, as a Director, I feel confident in the role I'm expected to play.	63.16%	84.21%
Q6. Overall, as a Director, I feel I add significant value to the success and sustainability of Engineers Canada.	36.84%	84.21%
Q7. Overall, as a Director, I feel my fellow Directors and CEO respect and value my contribution.	26.32%	78.95%
Q8. Overall, the Engineers Canada Board of Directors adds significant value to the success and sustainability of the organization.	36.84%	84.21%

The **2022 evaluation** indicates room for the greatest improvement in three (3) areas. These are indicated in red in the following tables and include:

Q4. Increasing Directors' familiarity with Engineers Canada's guiding governance documents (Legislation, By-laws, Policies, Procedures, etc.)

Q9. Influencing / attracting / recruiting Director candidates that are dedicated, diversely experienced and competent as Directors.

Q6, Q7, Q8. Improving the value and contribution Directors and the Board add, and feel they add to the success of Engineers Canada. –

The **2022 evaluation** indicates room for some improvement in thirteen (13) additional areas. These are indicated in yellow in the following tables and include:

Q12. The Board invests in orientation, training and development that supports Directors to be confident and valuable contributors to the Engineers Canada's governance system.

Q16. The form, frequency and substance of Board meetings is optimal for enabling Directors to carry out their roles as the fiduciary stewards and strategic leaders of Engineers Canada.

Q25. The Board's CEO performance management system is a reliable mechanism for directing, measuring and supporting the CEO's contribution to Engineers Canada.

Q30. The Board promotes inclusion, diversity, and equity throughout the organization and the Board.

Q35. Boards that are able to function effectively as a team have significantly greater impact on organizational success than any one, or subgroup, of well-qualified directors. Engineer Canada Directors come to board meetings with the intention to cooperate, collaborate and work cohesively with other directors to provide a critical governance function for the organization.

Q13. The Board actively leverages the skills, experience and diversity of all Directors in discussions and decision-making.

Q29. The Board culture is shaped by a commitment to continuous improvement and the pursuit of excellence.

Q10. The Board's competency profiles (Board, Director, Committee Chair & CEO) assist in keeping people accountable.

Q26. The Board's own performance management system, including these annual assessments, provide a reliable means of assessing and continuously improving Engineers Canada's governance competence.

Q34. Difficult decision-making requires Board Directors to speak candidly when it's necessary for the good of the organization. Engineer Canada Directors welcome candid conversations and manage them professionally and effectively.

Q20. The Board's relationship with Key Stakeholder organizations (CFES, EDC) is open, respectful and appropriate.

Q27. The Board culture is ‘Member centric’; focusing on enhancing Engineers Canada's value to those that depend on it the most.

Q39. Engineers Canada Directors demonstrate an understanding that their fiduciary duties are owed at all times to Engineers Canada. Directors avoid conflicts between the interests of Engineers Canada and their own interests or those of their home Regulator.

Section 1: Summary of Assessment Ratings

The following table summarizes the feedback received. Two columns of data are presented:

- The **LEFT** data column represents performance against the '**highest' standard**
- The **RIGHT** data column represents performance against the **'acceptable' standard**

Engineers Canada Board Assessment 2022 - Qualitative Question Level of Familiarity, Performance and Agreement		
Question	**Level of Familiarity 2022**	**Level of Familiarity 2022**
	(Very Familiar)	**(Mostly + Very Familiar)**
Q4. Please indicate how familiar you are with Engineers Canada's guiding governance documents (Articles, Bylaws, Policies, Procedures, Rules, etc.).	**36.84%**	**94.73%**
Question	**Level of Agreement 2022**	**Level of Familiarity 2022**
	(Very)	**(Adequately + Very)**
Q5. Overall, as a Director, I feel confident in the role I'm expected to play.	**63.16%**	**84.21%**
Q6. Overall, as a Director, I feel I add significant value to the success and sustainability of Engineers Canada.	**36.84%**	**84.21%**
Q7. Overall, as a Director, I feel my fellow Directors and CEO respect and value my contribution.	**26.32%**	**78.95%**
Q8. Overall, the Engineers Canada Board of Directors adds significant value to the success and sustainability of the organization.	**36.84%**	**84.21%**
Question	**Level of Performance 2022**	**Level of Performance 2022**
	(Good + Excellent)	**(Acceptable + Good + Excellent)**
PEOPLE: "ensuring capable and prepared directors"	**71.05%**	**85.09%**
Q9. Engineers Canada does its best to recruit Directors that are dedicated, diversely experienced and competent as Directors.	**42.11%**	**52.64%**
Q10. The Board's competency profiles (Board, Director, Committee Chair & CEO) assist in keeping people accountable.	**73.68%**	**89.47%**
Q11. The Board ensures that Directors are well informed about their role, duties and responsibilities as Directors.	**78.95%**	**94.74%**
Q12. The Board invests in orientation, training and development that supports Directors to be confident and valuable contributors to the Engineers Canada's governance system.	**73.69%**	**89.48%**
Q13. The Board actively leverages the skills, experience and diversity of all Directors in discussions and decision-making.	**73.68%**	**94.73%**
Q14. Board leadership, through the Chair and Officer positions, is strong, competent and sustainable.	**84.21%**	**89.47%**
STRUCTURE: "ensuring clear & supportive structures"	**83.34%**	**93.86%**
Q15. Engineer Canada's guiding governance documents (by-laws, policies and procedures) provide Directors with clarity and certainty about how the organization governs.	**94.74%**	**100.00%**
Q16. The form, frequency and substance of Board meetings is optimal for enabling Directors to carry out their roles as the fiduciary stewards and strategic leaders of Engineers Canada.	**73.69%**	**94.74%**
Q17. The Board of Directors understands and works within its 'group authority', acting on the will of the majority and speaking with 'one unified voice' to members and key stakeholders.	**78.95%**	**89.48%**
Q18. The Board of Directors is clear and disciplined with the delegation of authority that is given to the CEO.	**89.48%**	**94.74%**
Q19. The Board committees function effectively and add real value to Board decision-making.	**94.74%**	**100.00%**
Q20. The Board's relationship with Key Stakeholder organizations (CFES, EDC) is open, respectful and appropriate.	**68.42%**	**84.21%**

Engineers Canada Board Assessment 2022 - Qualitative Question Level of Familiarity, Performance and Agreement

Question	Level of Performance 2022 (Good + Excellent)	Level of Performance 2022 (Acceptable + Good + Excellent)
PROCESS: "ensuring reliable and enabling processes"	**84.21%**	**96.49%**
Q21. The Board-approved Strategic Plan provides a clear, long-term direction and priorities that help the Board of Directors focus and steward Engineers Canada.	**94.74%**	**100.00%**
Q22. The Board ensures that the CEO's operational plans and budgets align with and advance the Strategic Plan.	**94.74%**	**100.00%**
Q23. The Board's risk monitoring practices provide sufficient assurance to the Board that risks are being identified, tracked and managed.	**78.95%**	**89.48%**
Q24. The Board's performance monitoring practices provide sufficient assurance that progress is being made towards the Strategic Plan priorities and goals.	**89.47%**	**100.00%**
Q25. The Board's CEO performance management system is a reliable mechanism for directing, measuring and supporting the CEO's contribution to Engineers Canada.	**73.69%**	**94.74%**
Q26. The Board's own performance management system, including these annual assessments, provide a reliable means of assessing and continuously improving Engineers Canada's governance competence.	**73.68%**	**94.73%**
CULTURE: "ensuring a healthy and sustainable culture"	**73.69%**	**92.63%**
Q27. The Board culture is 'Member centric'; focusing on enhancing Engineers Canada's value to those that depend on it the most.	**63.16%**	**89.48%**
Q28. The Board culture is one of discipline, rigour, and transparency with its internal and external stakeholders.	**78.95%**	**94.74%**
Q29. The Board culture is shaped by a commitment to continuous improvement and the pursuit of excellence.	**73.68%**	**94.73%**
Q30. The Board promotes inclusion, diversity, and equity throughout the organization and the Board.	**73.69%**	**84.22%**
Q31. The Board encourages and welcomes independent and constructively critical perspectives in its discussions.	**78.95%**	**100.00%**
BOARD DYNAMICS: "creating and sustaining positive working dynamics"	**85.26%**	**97.89%**
Q32. A boardroom full of positivity primes an environment that produces great thinking, sound actions, good outcomes and, ultimately, strong governance. Engineer Canada Directors exhibit positive attitudes towards their duties and relationships as Board directors.	**89.47%**	**94.73%**
Q33. A Board Director's behaviour is a reflection of how they think and relate. Engineer Canada Directors exhibit behaviours that are courteous, respectful, and encourage open participation.	**94.74%**	**100.00%**
Q34. Difficult decision-making requires Board Directors to speak candidly when it's necessary for the good of the organization. Engineer Canada Directors welcome candid conversations and manage them professionally and effectively.	**73.68%**	**94.73%**
Q35. Boards that are able to function effectively as a team have significantly greater impact on organizational success than any one, or subgroup, of well-qualified directors. Engineer Canada Directors come to board meetings with the intention to cooperate, collaborate and work cohesively with other directors to provide a critical governance function for the organization.	**73.69%**	**100.00%**
Q36. While boards perform an important oversight function of the CEO, the CEO is also part of the larger 'team'. The Engineers Canada Board works to foster a positive working relationship with the CEO that is based on mutual trust and respect.	**94.74%**	**100.00%**

Engineers Canada Board Assessment 2022 - Qualitative Question Level of Familiarity, Performance and Agreement		
Question	**Level of Performance 2022**	**Level of Performance 2022**
	(Good + Excellent)	**(Acceptable + Good + Excellent)**
DIRECTOR CONTRIBUTION: "acts ethically, responsibly and solely in the best interest of Engineers Canada"	**83.46%**	**93.24%**
Q37. Engineers Canada Directors demonstrate a strong understanding and commitment to their 3 primary duties: Duty of Care, Duty of Obedience and Duty of Loyalty.	**84.22%**	**94.75%**
Q38. Engineers Canada Directors demonstrate a strong understanding and commitment to the mission, vision, values and strategic priorities of the organization.	**94.74%**	**100.00%**
Q39. Engineers Canada Directors demonstrate an understanding that their fiduciary duties are owed at all times to Engineers Canada. Directors avoid conflicts between the interests of Engineers Canada and their own interests or those of their home Regulator.	**52.63%**	**68.42%**
Q40. Engineers Canada Directors attend meetings and participate in a manner that shows they have reviewed the Board package in advance. Directors demonstrate they have reflected on the key issues and have formed relevant thoughts/questions that are related to the agenda.	**89.48%**	**89.48%**
Q41. Engineers Canada Directors demonstrate they have the competency and capacity to contribute in a meaningful way to the stewardship and strategic leadership of the organization.	**89.48%**	**100.00%**
Q42. Engineers Canada Directors demonstrate they are well prepared to actively and productively engage in Board meeting agenda items and the collective decision-making process.	**89.48%**	**100.00%**
Q43. Engineers Canada Directors avoid getting into operational “weeds” and micro-managing the CEO, who is delegated the majority of day-to-day decision-making.	**84.21%**	**100.00%**
Question	**Level of Satisfaction 2022**	**Level of Satisfaction 2022**
	(Very Satisfied)	**(Satisfied + Very Satsfied)**
Q44. Please rate your level of satisfaction with the following Director development opportunities and supports. You may also provide comments for each item.	**43.86%**	**64.91%**
4 Seasons of Reconciliation online training (ongoing access)	**63.16%**	**84.21%**
Canadian Nonprofit Academy’s Board-on-Board online course (ongoing access)	**42.11%**	**63.16%**
Director training focused on truth and reconciliation, delivered by Engineers Canada staff in September 2022	**47.37%**	**68.42%**
General governance training, delivered by tng consultants in June 2022	**42.11%**	**68.43%**
Unconscious bias, essential requirements and accessibility in engineering, delivered by IDEA-STEM in May 2022	**52.63%**	**68.42%**
Board buddy list, provided to new Directors at orientation	**15.79%**	**36.84%**

Section 2: Ranked Assessment Ratings

Engineers Canada Board Assessment 2022 - Qualitative Question Level of Familiarity, Performance and Agreement

Question	Level of Familiarity 2022	Level of Familiarity 2022
	(Very Familiar)	(Mostly + Very Familiar)
Q4. Please indicate how familiar you are with Engineers Canada's guiding governance documents (Articles, Bylaws, Policies, Procedures, Rules, etc.).	36.84%	94.73%
Question	**Level of Agreement 2022**	**Level of Familiarity 2022**
	(Very)	(Adequately + Very)
Q5. Overall, as a Director, I feel confident in the role I'm expected to play.	63.16%	84.21%
Q6. Overall, as a Director, I feel I add significant value to the success and sustainability of Engineers Canada.	36.84%	84.21%
Q8. Overall, the Engineers Canada Board of Directors adds significant value to the success and sustainability of the organization.	36.84%	84.21%
Q7. Overall, as a Director, I feel my fellow Directors and CEO respect and value my contribution.	26.32%	78.95%
Question	**Level of Performance 2022**	**Level of Performance 2022**
	(Good + Excellent)	(Acceptable + Good + Excellent)
Q15. Engineer Canada's guiding governance documents (by-laws, policies and procedures) provide Directors with clarity and certainty about how the organization governs.	94.74%	100.00%
Q19. The Board committees function effectively and add real value to Board decision-making.	94.74%	100.00%
Q21. The Board-approved Strategic Plan provides a clear, long-term direction and priorities that help the Board of Directors focus and steward Engineers Canada.	94.74%	100.00%
Q22. The Board ensures that the CEO's operational plans and budgets align with and advance the Strategic Plan.	94.74%	100.00%
Q33. A Board Director’s behaviour is a reflection of how they think and relate. Engineer Canada Directors exhibit behaviours that are courteous, respectful, and encourage open participation.	94.74%	100.00%
Q36. While boards perform an important oversight function of the CEO, the CEO is also part of the larger 'team'. The Engineers Canada Board works to foster a positive working relationship with the CEO that is based on mutual trust and respect.	94.74%	100.00%
Q38. Engineers Canada Directors demonstrate a strong understanding and commitment to the mission, vision, values and strategic priorities of the organization.	94.74%	100.00%
Q18. The Board of Directors is clear and disciplined with the delegation of authority that is given to the CEO.	89.48%	94.74%
Q40. Engineers Canada Directors attend meetings and participate in a manner that shows they have reviewed the Board package in advance. Directors demonstrate they have reflected on the key issues and have formed relevant thoughts/questions that are related to the agenda.	89.48%	89.48%
Q41. Engineers Canada Directors demonstrate they have the competency and capacity to contribute in a meaningful way to the stewardship and strategic leadership of the organization.	89.48%	100.00%
Q42. Engineers Canada Directors demonstrate they are well prepared to actively and productively engage in Board meeting agenda items and the collective decision-making process.	89.48%	100.00%

Engineers Canada Board Assessment 2022 - Qualitative Question Level of Familiarity, Performance and Agreement

Question	Level of Performance 2022 (Good + Excellent)	Level of Performance 2022 (Acceptable + Good + Excellent)
Q24. The Board's performance monitoring practices provide sufficient assurance that progress is being made towards the Strategic Plan priorities and goals.	**89.47%**	**100.00%**
Q32. A boardroom full of positivity primes an environment that produces great thinking, sound actions, good outcomes and, ultimately, strong governance. Engineer Canada Directors exhibit positive attitudes towards their duties and relationships as Board directors.	**89.47%**	**94.73%**
Q37. Engineers Canada Directors demonstrate a strong understanding and commitment to their 3 primary duties: Duty of Care, Duty of Obedience and Duty of Loyalty.	**84.22%**	**94.75%**
Q14. Board leadership, through the Chair and Officer positions, is strong, competent and sustainable.	**84.21%**	**89.47%**
Q43. Engineers Canada Directors avoid getting into operational "weeds" and micro-managing the CEO, who is delegated the majority of day-to-day decision-making.	**84.21%**	**100.00%**
Q17. The Board of Directors understands and works within its 'group authority', acting on the will of the majority and speaking with 'one unified voice' to members and key stakeholders.	**78.95%**	**89.48%**
Q23. The Board's risk monitoring practices provide sufficient assurance to the Board that risks are being identified, tracked and managed.	**78.95%**	**89.48%**
Q28. The Board culture is one of discipline, rigour, and transparency with its internal and external stakeholders.	**78.95%**	**94.74%**
Q31. The Board encourages and welcomes independent and constructively critical perspectives in its discussions.	**78.95%**	**100.00%**
Q11. The Board ensures that Directors are well informed about their role, duties and responsibilities as Directors.	**78.95%**	**94.74%**
Q12. The Board invests in orientation, training and development that supports Directors to be confident and valuable contributors to the Engineers Canada's governance system.	**73.69%**	**89.48%**
Q16. The form, frequency and substance of Board meetings is optimal for enabling Directors to carry out their roles as the fiduciary stewards and strategic leaders of Engineers Canada.	**73.69%**	**94.74%**
Q25. The Board's CEO performance management system is a reliable mechanism for directing, measuring and supporting the CEO's contribution to Engineers Canada.	**73.69%**	**94.74%**
Q30. The Board promotes inclusion, diversity, and equity throughout the organization and the Board.	**73.69%**	**84.22%**
Q35. Boards that are able to function effectively as a team have significantly greater impact on organizational success than any one, or subgroup, of well-qualified directors. Engineer Canada Directors come to board meetings with the intention to cooperate, collaborate and work cohesively with other directors to provide a critical governance function for the organization.	**73.69%**	**100.00%**
Q13. The Board actively leverages the skills, experience and diversity of all Directors in discussions and decision-making.	**73.68%**	**94.73%**
Q29. The Board culture is shaped by a commitment to continuous improvement and the pursuit of excellence.	**73.68%**	**94.73%**
Q10. The Board's competency profiles (Board, Director, Committee Chair & CEO) assist in keeping people accountable.	**73.68%**	**89.47%**

Engineers Canada Board Assessment 2022 - Qualitative Question Level of Familiarity, Performance and Agreement

Question	Level of Performance 2022	Level of Performance 2022
	(Good + Excellent)	(Acceptable + Good + Excellent)
Q26. The Board's own performance management system, including these annual assessments, provide a reliable means of assessing and continuously improving Engineers Canada's governance competence.	**73.68%**	**94.73%**
Q34. Difficult decision-making requires Board Directors to speak candidly when it's necessary for the good of the organization. Engineer Canada Directors welcome candid conversations and manage them professionally and effectively.	**73.68%**	**94.73%**
Q20. The Board's relationship with Key Stakeholder organizations (CFES, EDC) is open, respectful and appropriate.	**68.42%**	**84.21%**
Q27. The Board culture is 'Member centric'; focusing on enhancing Engineers Canada's value to those that depend on it the most.	**63.16%**	**89.48%**
Q39. Engineers Canada Directors demonstrate an understanding that their fiduciary duties are owed at all times to Engineers Canada. Directors avoid conflicts between the interests of Engineers Canada and their own interests or those of their home Regulator.	**52.63%**	**68.42%**
Q9. Engineers Canada does its best to recruit Directors that are dedicated, diversely experienced and competent as Directors.	**42.11%**	**52.64%**
Question	**Level of Satisfaction 2022**	**Level of Satisfaction 2022**
	(Very Satisfied)	(Satisfied + Very Satsfied)
Q44. Please rate your level of satisfaction with the following Director development opportunities and supports. You may also provide comments for each item.	**43.86%**	**64.91%**
4 Seasons of Reconciliation online training (ongoing access)	**63.16%**	**84.21%**
Unconscious bias, essential requirements and accessibility in engineering, delivered by IDEA-STEM in May 2022	**52.63%**	**68.42%**
Director training focused on truth and reconciliation, delivered by Engineers Canada staff in September 2022	**47.37%**	**68.42%**
Canadian Nonprofit Academy's Board-on-Board online course (ongoing access)	**42.11%**	**63.16%**
General governance training, delivered by tng consultants in June 2022	**42.11%**	**68.43%**
Board buddy list, provided to new Directors at orientation	**15.79%**	**36.84%**

BRIEFING NOTE: For information

Acclamation of the President-Elect	7.1
Purpose:	To declare the 2023-2024 Engineers Canada President-Elect
Link to the Strategic Plan / Purposes:	Board responsibility: Hold itself, its Directors, and its Direct Reports accountable
Link to the Corporate Risk Profile:	Decreased confidence in governance functions (Board risk)
Prepared by:	Joan Bard Miller, Manager, Governance and Board Services
Presented by:	Danny Chui (Past President), Chair of the Nominations Committee

Background

- The President-Elect is elected by the Engineers Canada Board annually, at the May Board meeting.
- The President-Elect holds office for the period from the close of the May Board meeting to the end of the next May Board meeting. After that time, the President-Elect takes over the position as President of the Engineers Canada Board.

Status Update

- The Past President, acting as the chair of the Nominating Committee, issued a call for nominations to each Director for the position of President-Elect. The call was open for a period of two (2) months.
- With only one nomination received (for M. Wrinch), and eligibility having been confirmed, M. Wrinch will fill the position of President-Elect. As per Board policy 6.13, *President-Elect Nomination and Election Process*, if only one candidate is nominated for President-Elect, the position shall be filled by acclamation.

Next steps

- M. Wrinch will assume the role of President-Elect, effective as of the close of the May 27, 2023 annual meeting of members.
- Human Resources Committee membership will be finalized (agenda item 7.2).
- Administrative updates to be made by staff (such as website information, etc.).

Appendix

- **Appendix 1:** Candidate CV under separate cover, circulated to Directors only.

BRIEFING NOTE: For decision

Appointment of the 2023-2024 HR Committee	7.2
Purpose:	To appoint Directors to the 2023-2024 Human Resources (HR) Committee
Link to the Strategic Plan / Purposes:	Board responsibility: Hold Itself, its Directors, and its Direct Reports Accountable
Link to Corporate Risk Profile:	Decreased confidence in the governance functions (Board risk)
Motion(s) to consider:	*THAT the Board, on recommendation of the HR Committee, appoint the following Directors to the 2023-2024 HR Committee:* *a. Ann English* *b. Arjan Arenja* *c. Stormy Holmes, CEO Group Advisor, Nominated by CEO Group*
Vote required to pass:	Simple majority
Prepared by:	Joan Bard Miller, Manager, Governance and Board Services
Presented by:	Mike Wrinch, Director from British Columbia, Chair of the HR Committee

Problem/issue definition

- Board policy 6.12, *HR Committee Terms of Reference,* states:
  - The HR Committee is comprised of the President, President-Elect, and Past President, an appointed CEO Group member to serve as "Advisor", and a minimum of two other Directors.
  - The outgoing HR Committee shall, annually, nominate at least two Directors and one alternate to the next year's HR Committee. The alternate Director shall only serve if one of the other Directors is elected by the Board as President-Elect.
- The HR Committee has provided a recommendation for two (2) Directors to complete the composition of the 2023-2024 HR Committee. The position of President-Elect for 2023-2024 has been filled by acclamation and will be occupied by Mike Wrinch. As a result, the appointment of an alternate Director is not necessary.
- At the February 2023 Board meeting, the CEO Group advised that its nominee as CEO Group Advisor to the HR Committee is Stormy Holmes, Executive Director and Registrar, APEGS.

Proposed action/recommendation

- That the Board appoint the following Directors to the 2023-2024 HR Committee:
  - Ann English, British Columbia
  - Arjan Arenja, Ontario

Other options considered

- None.

Risks

- None.

Financial implications

- None.

Benefits

- Once approved by the Board at the May meeting, the HR Committee can immediately begin nominating Directors for all other Board committees and appointments, for approval at the June Board meeting.

Consultation

- This process is as set out in Board policy 6.12, *HR Committee Terms of Reference*.
- The CEO Group discussed at its meeting on February 21, 2023, its nominee to the HR Committee.
- Each Director was asked to identify the committees, task forces and other roles with which they would like to serve as part of the 2023 Director self-assessment survey. Responses were received from 19 of the 23 Directors with three (3) reminders sent. The HR Committee's recommendations should be based on received survey responses, together with committee composition requirements, as set out in Board policy 6.12, and a desire to attain some level of knowledge continuity within the Committee.

Next steps (if motion approved)

- The 2023-2024 HR Committee to meet and nominate Directors for all other Board committees and appointments.
- Staff will update website information.

Appendix

- None.