Tailings Management

An Important ESG Component

MN SME Conference
April 18, 2023

Today's discussion

- ESG landscape
- GISTM overview
- Adoption considerations

ESG landscape – crowded, confusing space

- Lots of players
- Lack of common standards
- Endless desire for data

ESG landscape continues to evolve

Investor Expectations
Asset managers to ramp up engagement with mining companies over tailings safety – *February 2022*

Company Response
79 companies have committed to or are assessing GISTM alignment *–January 2022*

New ESG Standards
Global Reporting Initiative introduces mining sector standard – *February 2023*

Industry Commitments
August 2023 date approaches for members to show GISTM alignment

Oversight
New Independent Global Tailings Management Institute announced to drive mining industry safety standard – *January 2023*

GISTM – overview

Source: https://globaltailingsreview.org/

GISTM – overview (cont.)

Expert Panel

- Dr. Bruno Oberle (Chair)
- Andrew Hopkins (Health & Safety)
- Angela Küpper (Tailings)
- Deanna Kemp (Community)
- Dir Van Zyl (Tailings)
- Karen Nash (Risk Assessment)
- Mark Sauillace (Legal)
- Susan Joyce (Community)

Source: https://globaltailingsreview.org/

GISTM – overview (cont.)

Multi-Stakeholder Advisory Group

- Academia
- Civil society
- Financial institutions/insurers
- Industry/tailings experts
- Legal advisor
- Multi-lateral organizations
- Oversight institutions

Source: https://globaltailingsreview.org/

GISTM – overview (cont.)

Consultation

- Draft GISTM released in late-2019
- Public consultation period November 2019 – January 2020
- Email, online portal, webinars, and 21 workshops
- Feedback from over 600 individuals and organizations
- GISTM released August 2020

Source: https://globaltailingsreview.org/

GISTM – overview (cont.)

"The Global Industry Standard on Tailings Management strives to achieve the ultimate goal of zero harm to people and the environment with zero tolerance for human fatality."

Source: GISTM

GISTM – overview (cont.)

"The Global Industry Standard on Tailings Management strives to achieve the ultimate goal of zero harm to people and the environment and human

"The Standard provides a framework for safe tailings facility management while affording the Operators flexibility..."

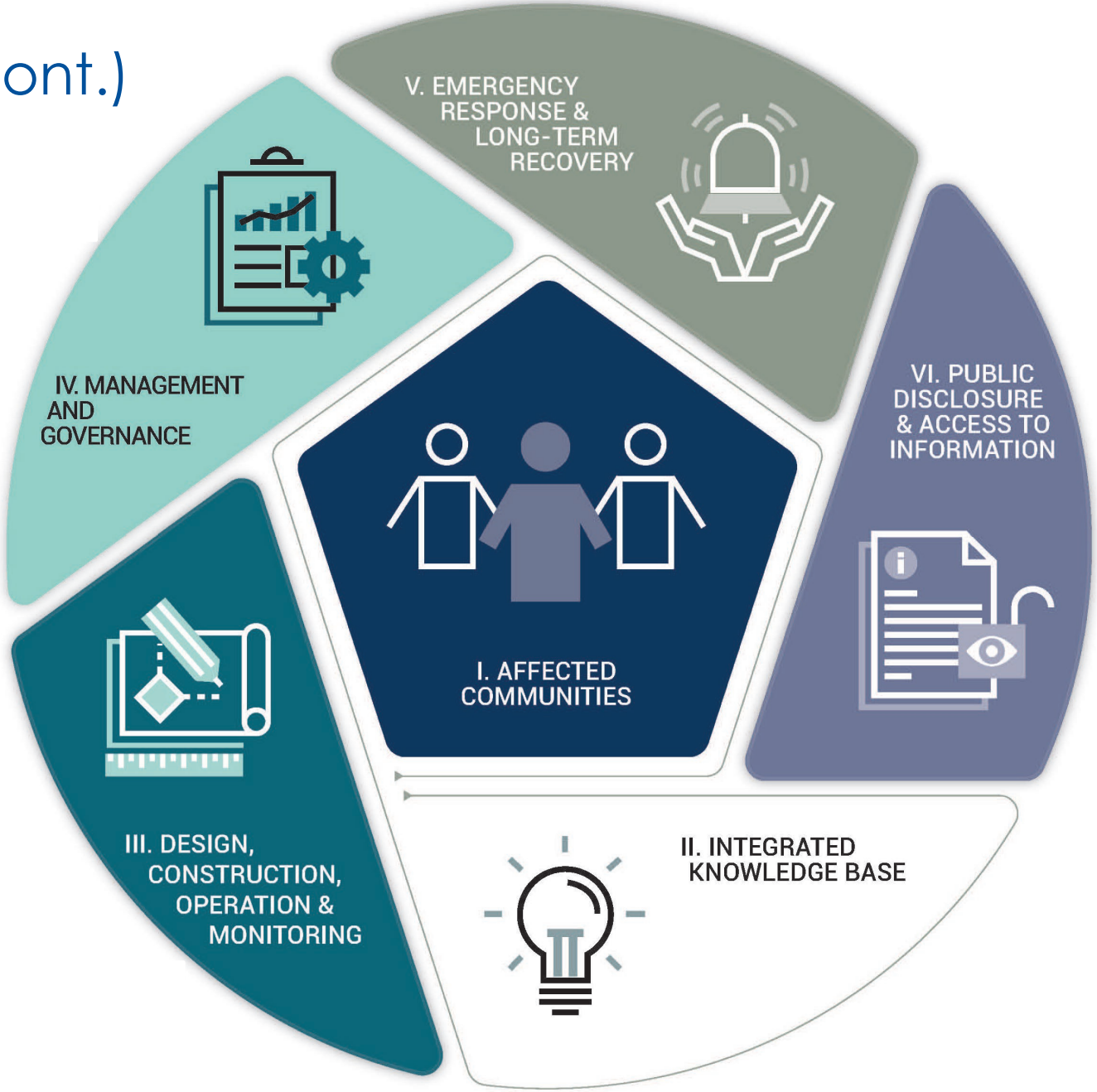
Source: GISTM

GISTM – overview (cont.)

GISTM

- Strengthens industry ESG requirements
- Covers full life-cycle
- Elevates accountability
- Requires independent oversight

GISTM – overview (cont.)



Source: https://smi.uq.edu.au/article/2021/11/global-industry-standard-tailings-management-launches-support-smi

GISTM – overview (cont.)

GISTM

- 6 topic areas
- 15 principles
- 77 requirements

Source: GISTM

GISTM – overview (cont.)

MANAGEMENT AND GOVERNANCE

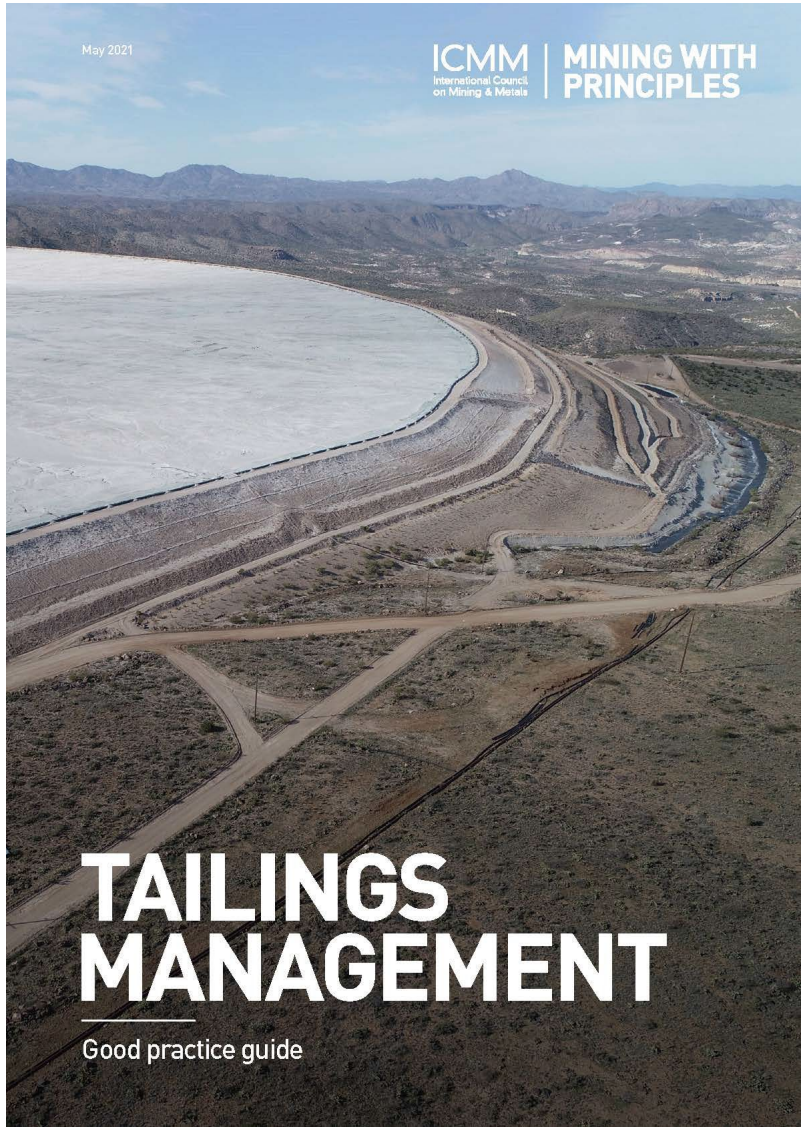
TOPIC IV

PRINCIPLE 8 **ESTABLISH POLICIES, SYSTEMS AND ACCOUNTABILITIES TO SUPPORT THE SAFETY AND INTEGRITY OF THE *TAILINGS FACILITY*.**

Requirement 8.1 The *Board of Directors* shall adopt and publish a policy on or commitment to the safe management of *tailings facilities*, to emergency preparedness and response, and to recovery after failure.

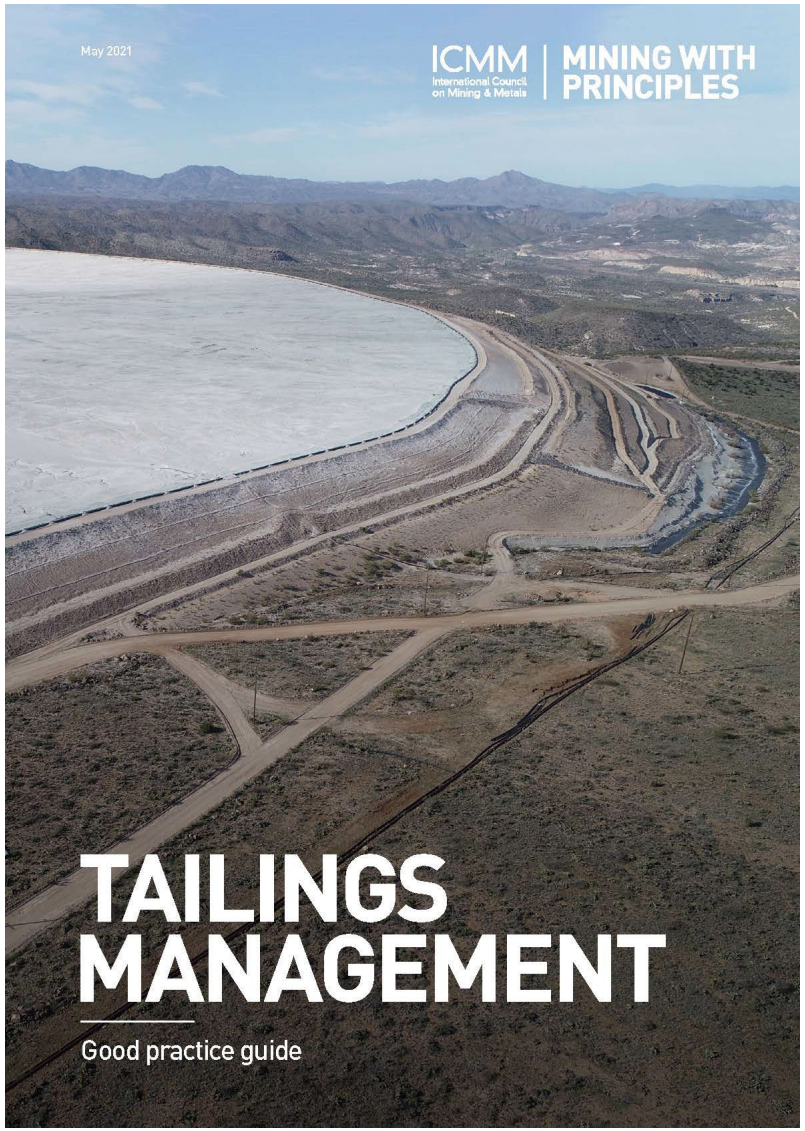
Source: GISTM

GISTM – overview (cont.)



Source: ICMM Good Practice Guide

GISTM – overview (cont.)

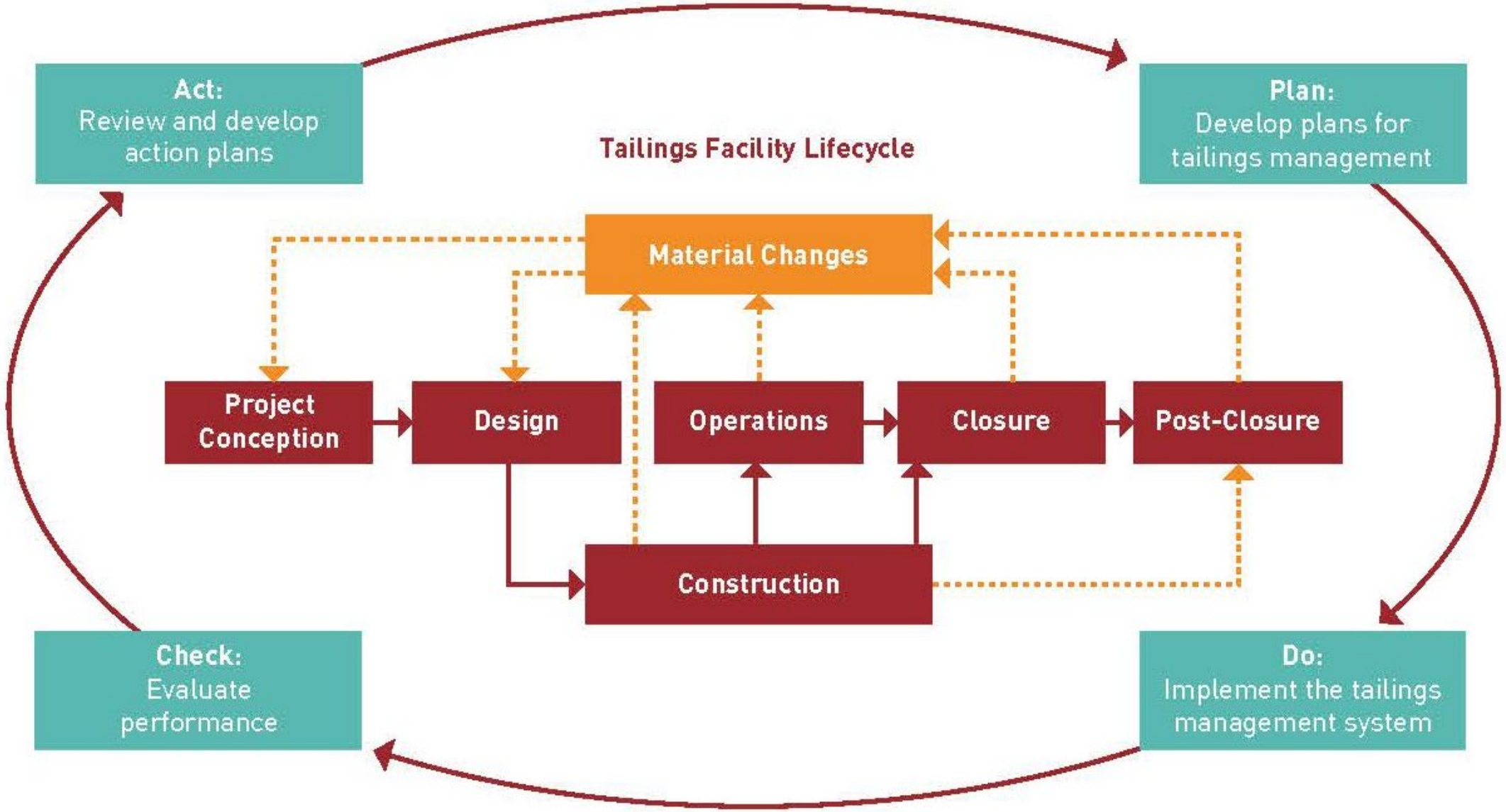


The Guide…

- Is informed by the GISTM
- Provides overview of good engineering practices
- Should not be used to assess conformance

Source: ICMM Good Practice Guide

GISTM – overview (cont.)



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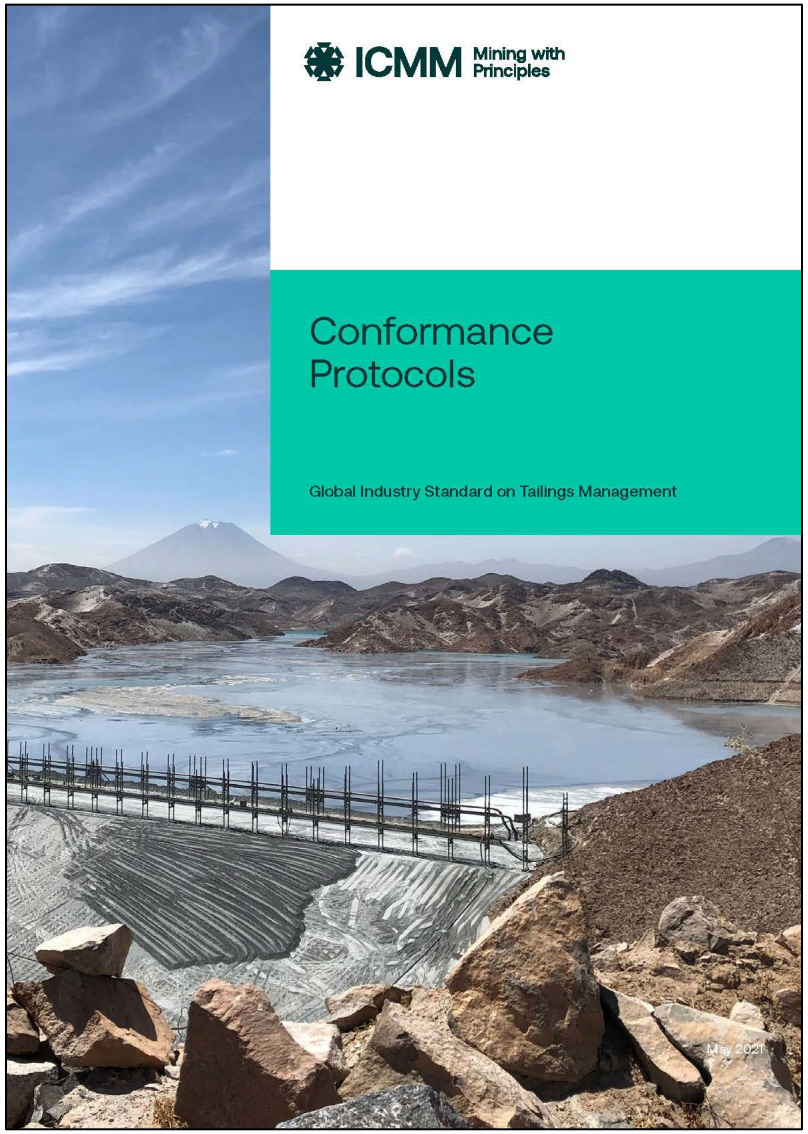

Source: ICMM Conformance Protocols

GISTM – overview (cont.)

Conformance level	Description of outcome
Meets	Systems and/or practices related to the Requirement have been implemented and there is sufficient evidence to demonstrate that the Requirement is being met.
Partially meets	Systems and/or practices related to meeting the Requirement have been only partially implemented. Gaps or weaknesses persist that may contribute to an inability to meet the Requirement, or insufficient verifiable evidence has been provided to demonstrate that the activity is aligned to the Requirement.
Does not meet	Does not Meet – Systems and/or practices required to support implementation of the Requirement are not in place, or are not being implemented, or cannot be evidenced.
Not applicable	The specific Requirement is not applicable to the context of the asset.

Source: ICMM Conformance Protocols

GISTM – overview (cont.)

Principle 3

Use All Elements of the *Knowledge Base* – Social, Environmental, Local Economic and Technical – to Inform Decisions Throughout the *Tailings Facility Lifecycle*, Including Closure.

	Requirement 3.1
1	To enhance resilience to climate change, evaluate, regularly update and use climate change knowledge throughout the *tailings facility lifecycle* in accordance with the principles of *Adaptive Management*.

	Assessment		
	Conformance	Criteria	Examples
2	Meets	The following are demonstrated: a. To enhance resilience, climate change knowledge is regularly updated and used to evaluate risks and opportunities to the *tailings facility lifecycle*, in accordance with the principles of *adaptive management*, with the aim of enhancing resiliency to climate change.	a. Climate change knowledge can be developed through a climate change resilience assessment based on recognised global standards (example IPPC[1,2]) applicable to the region where the Company operates. Examples include 5, 10, 25 year conceptual plans for the *tailing facility/ies* that consider +/- temperature differences and the impacts on hydrogeological cycle, *tailings* dust generation, stability, etc. Examples include establishing a frequency for updating the climate change *knowledge base* and applying this to the risks and opportunities evaluation such that the goal of resiliency is maintained. *Adaptive Management* example includes identification and implementation of mitigation and management measures that are responsive to climate change with the aim of reducing uncertainty over time via system monitoring.

	Interpretive and Clarification Notes:
3	1. The '*Intergovernmental Panel on Climate Change (IPPC)*' defines adaptation as '*any adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects which moderates harm or exploits beneficial opportunities*'. 2. ICMM members can apply the Mining Climate Assessment Tool (MICA) to understand uncertainties due to climate change at the Asset level, which use of the latest IPCC climate projections data. 3. ISO FDIS 14090: 2019. Adaptation to Climate Change – Principles, Requirements and Guidelines outlines general approaches to climate change adaptation.

	Equivalent Standards for demonstrating conformance
4	a. ICMM Position Statement on Climate Change (2019) requires that climate change risks and opportunities are considered in business decision making and to advance operational level adaptation and mitigation solutions, taking in consideration local opportunities and challenges. This is partially equivalent to conformance with this protocol, but would be fully equivalent where it can be demonstrated that climate change knowledge is regularly updated and used to evaluate risks and opportunities to the *tailings facility lifecycle*.

Source: ICMM Conformance Protocols

GISTM – overview (cont.)

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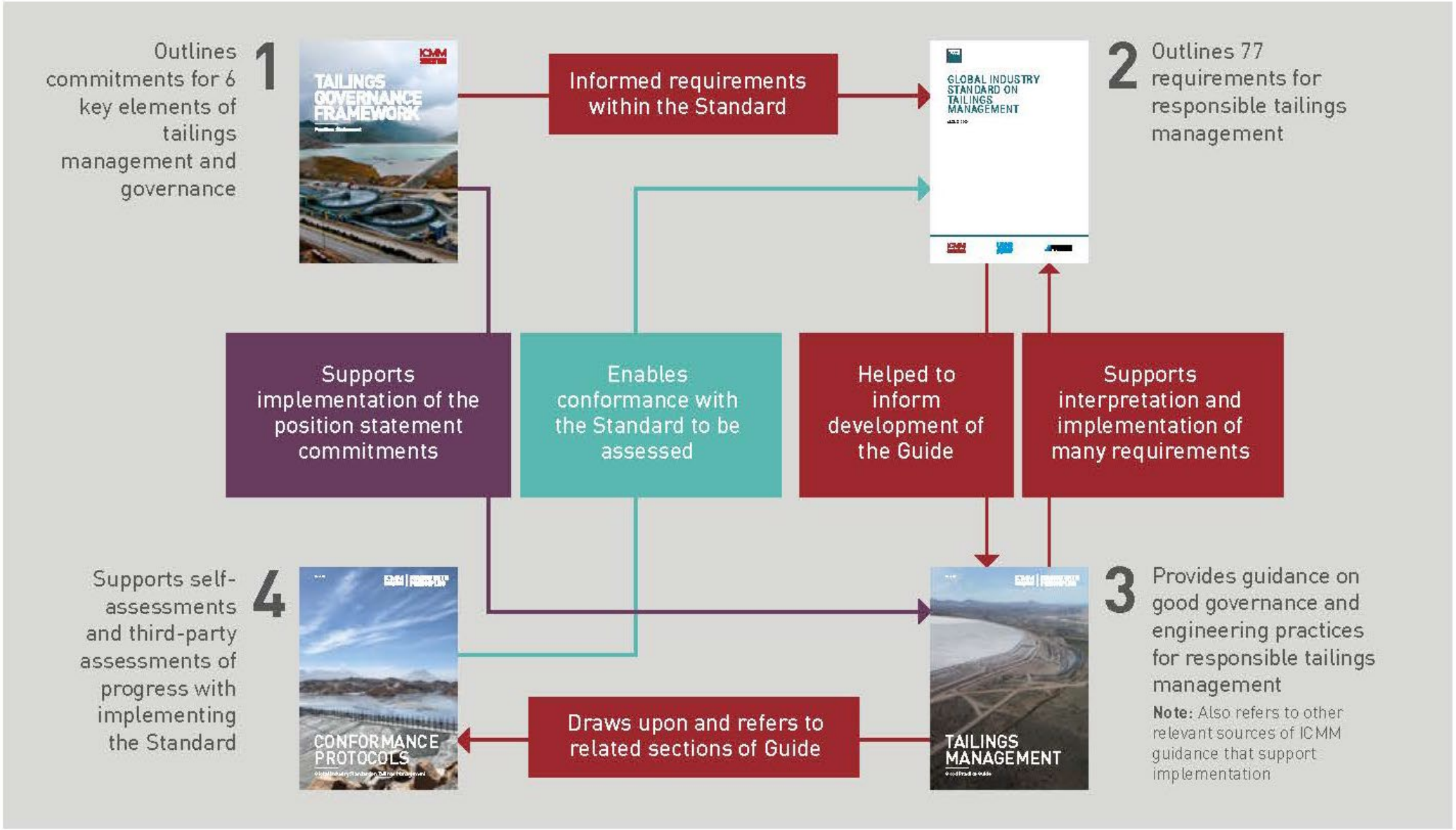

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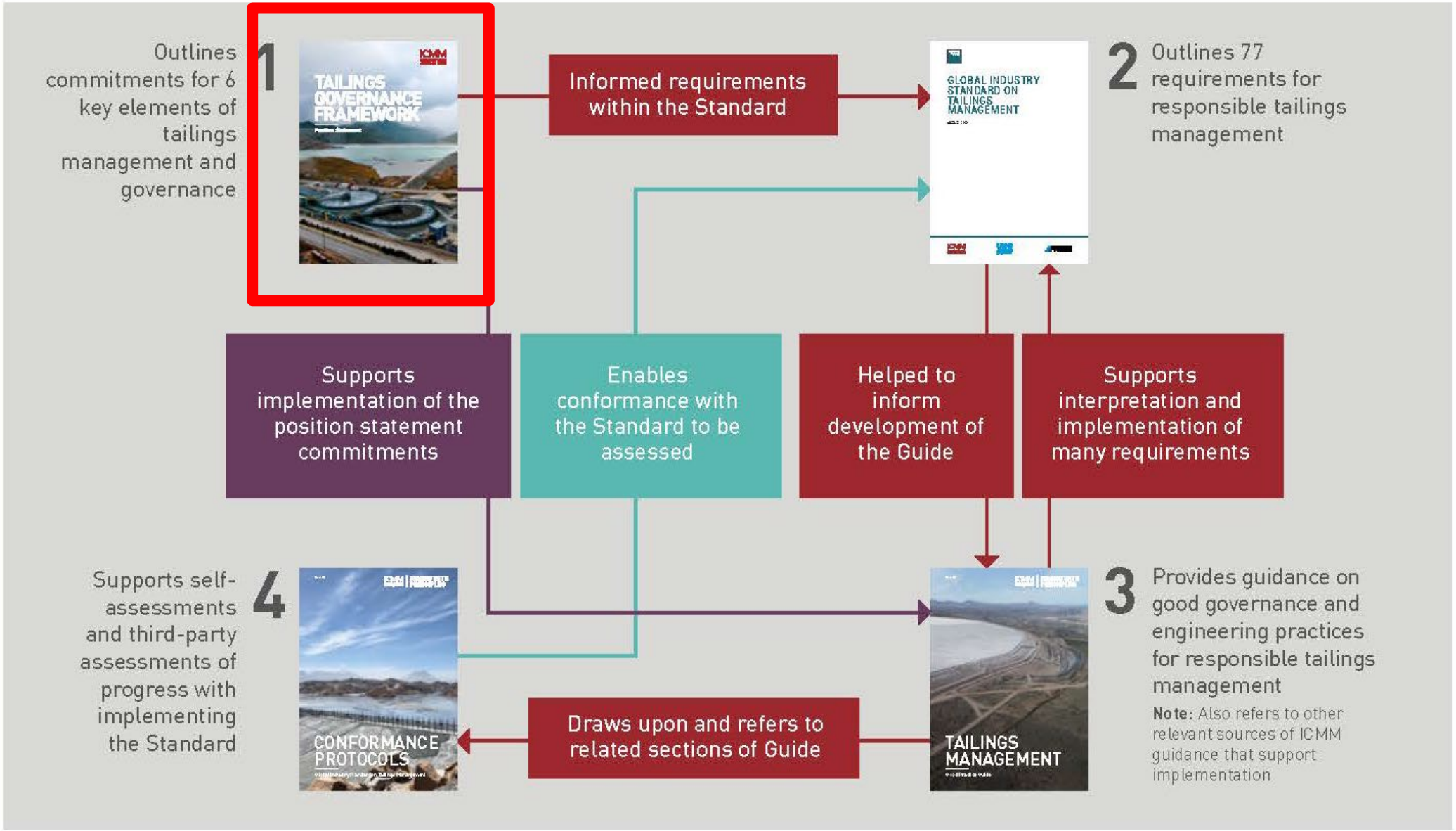

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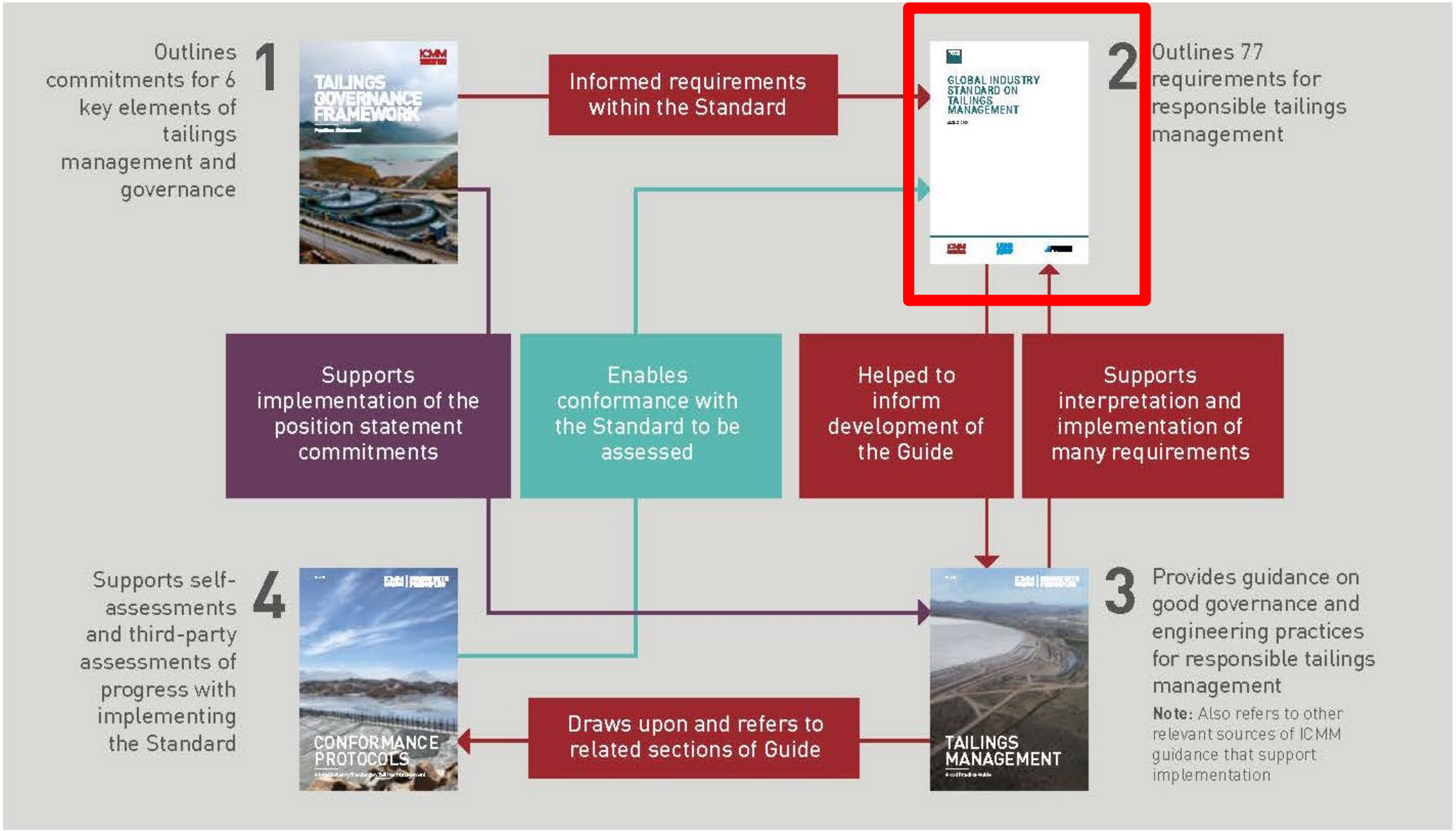

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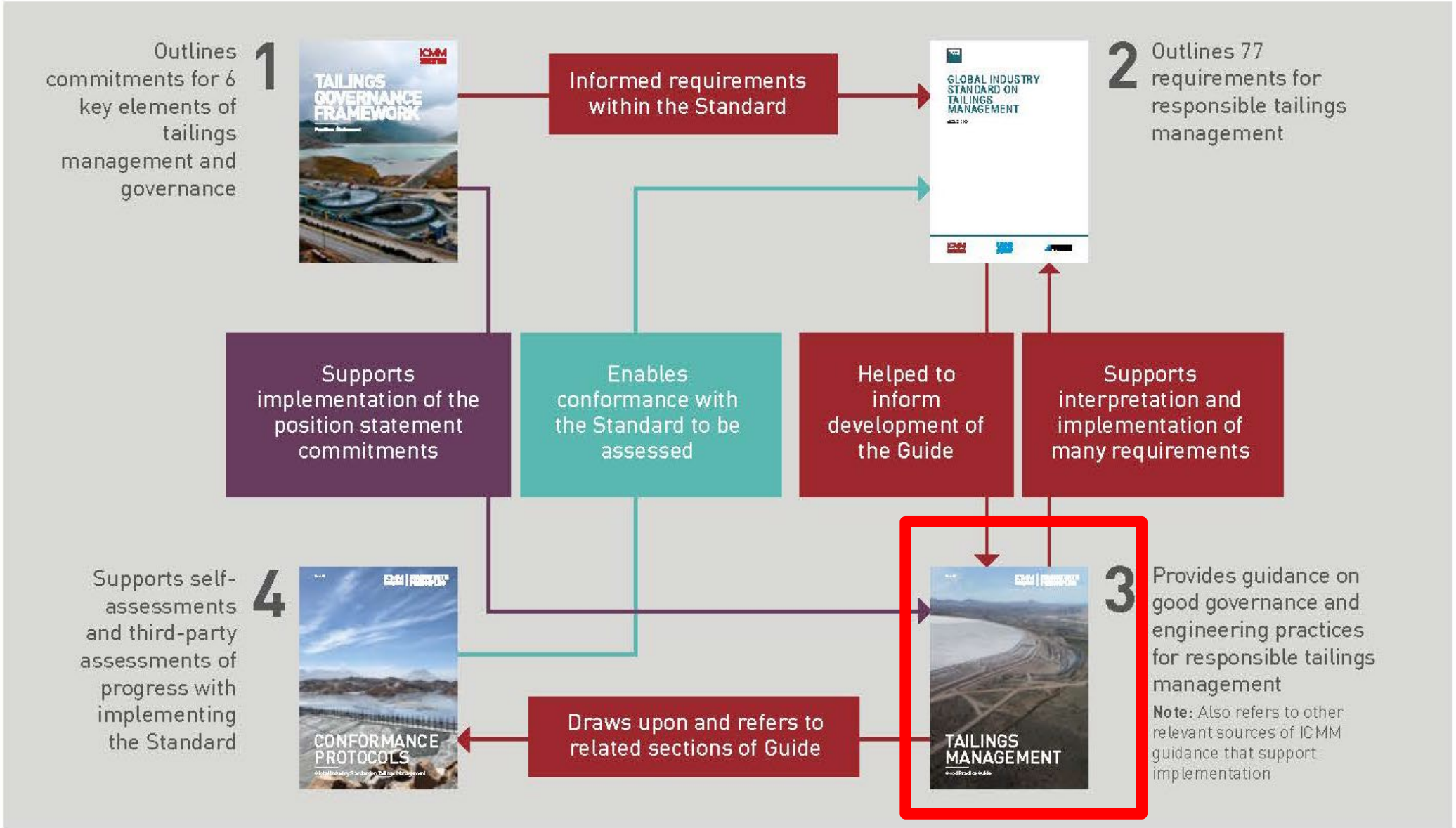

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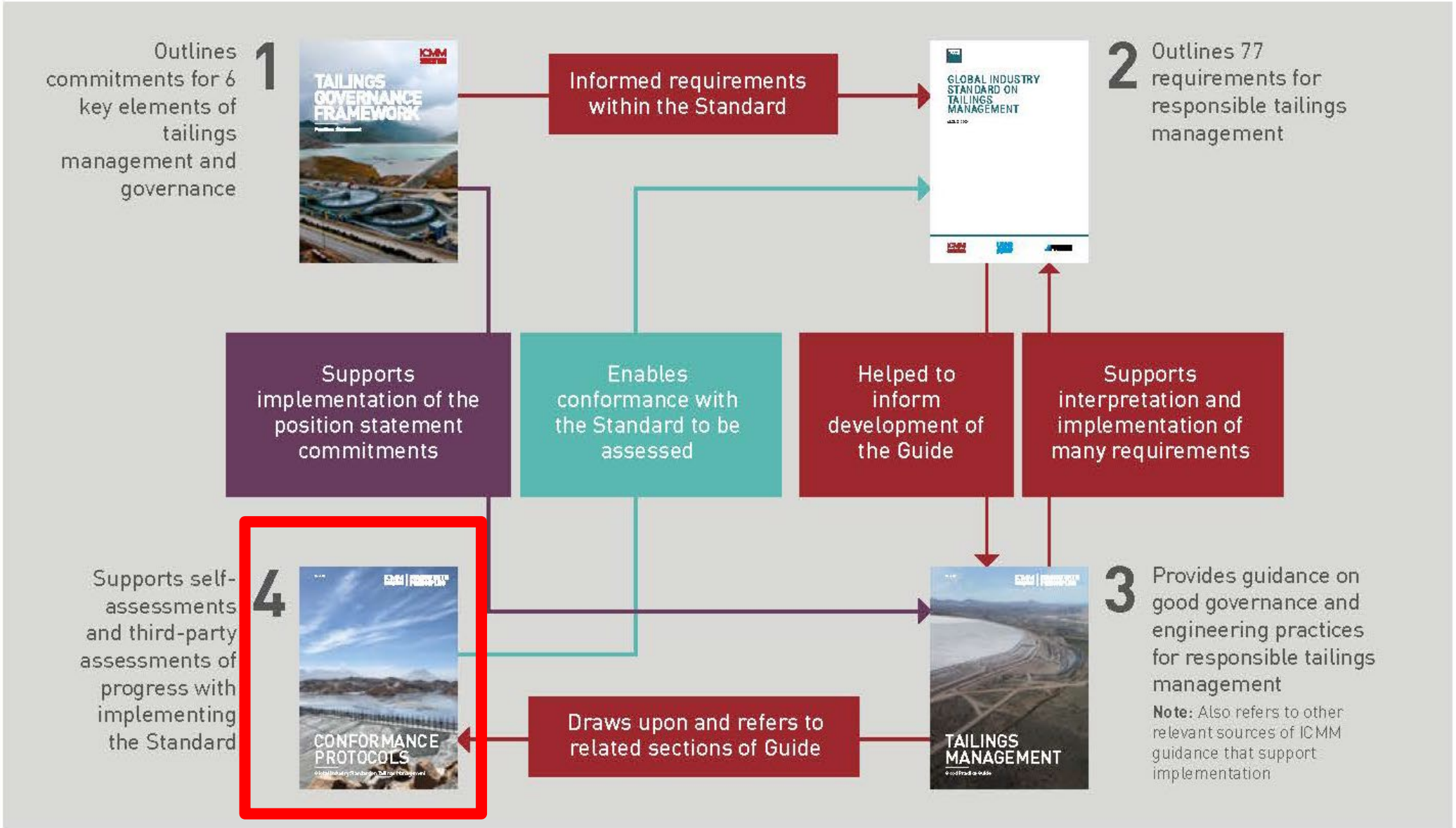

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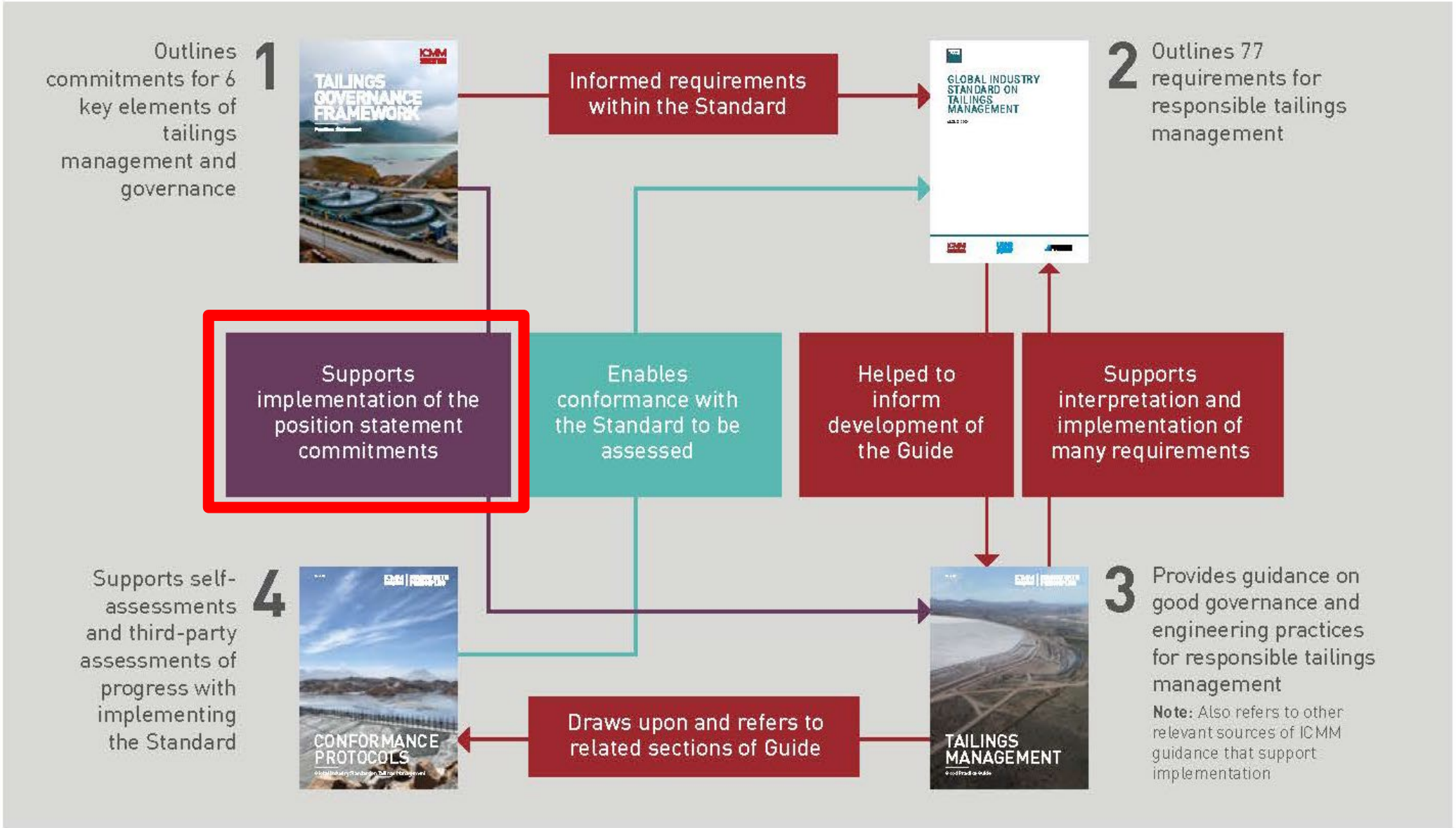

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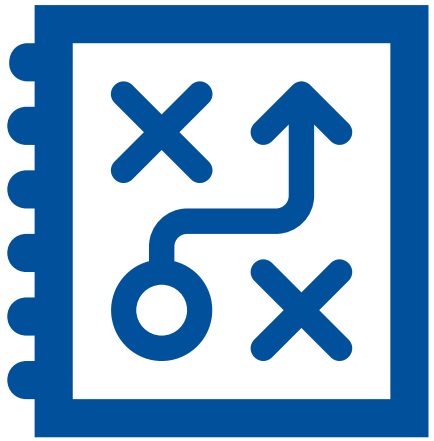
GISTM – key considerations



- Drivers and approach vary by company
- Stakeholder expectations matter
- Peer and regulatory developments likely to evolve
- Important to be deliberate

GISTM – linkage to other ESG standards

Refers to GISTM for consistency regarding tailings

Specific to tailings: standard met if align to GISTM, connects to three UN Sustainable Development Goals

GRI – new mining sector standard

25
Likely material topics

April 30
Comment period closes

2023 Q4
Standard final (anticipated)

- GHG emissions
- Climate adaptation & resilience
- Air emissions
- Biodiversity
- Waste
- Tailings
- Water & effluents
- Closure & rehabilitation
- Economic impacts
- Local communities
- Rights of Indigenous Peoples
- Land & resource rights
- Artisanal & small-scale mining
- Security practices
- Critical incident management
- Occupational health and safety
- Employment practices
- Child labor
- Forced labor & modern slavery
- Freedom of association & collective bargaining
- Non-discrimination & equal opportunity
- Conflict-affected & high-risk areas
- Payments to governments
- Anti-corruption
- Public policy

Source: GRI

Takeaways

- ESG momentum is not slowing down
- Tailings management is a material issue and the GISTM is gaining increased recognition
- Drivers and approaches vary by company

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for more information