



# Holistic Protection of Aquatic Ecosystems: Developing a Scientific Framework to Modernize Sediment Standards

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Science Advisory Board for Contaminated Sites in BC (SABCS)

Science and Standards Technical Advisory Committee

# Sediment Standards Project - Phase 1

## Overview

Collaborative development a scientific framework for modernizing sediment standards.

### Phase 1 (2025) Deliverables:

- High-Level Summary (White Paper)
- Scoping Plan (Roadmap)

## SABCs White Paper

- Preliminary Scientific Review
- Jurisdictional Scan
- Interim Scientific Framework
- Community Engagement
  - Survey
  - **Interactive Session at CEW**
  - Technical Working Groups
- Prioritization Framework
- Strategic Planning and Recommendations

## Today's CEW Session

- Overview of the project (now)
- Survey results: What We Heard
- Four key themes
- Gathering insights to inform the collaborative development of a scientific framework
- Your expertise and diverse perspectives are invaluable.



# The Context: Why Update Now? Why Together?



## Current Limitations

Schedule 3.4 standards lack bioavailability metrics and explicit food chain protection.



## Scientific Advancements

New understanding of bioaccumulation, mixtures, and emerging contaminants demands updates.



## Collaborative Solution

Complex challenges require diverse expertise and shared understanding.

# Our Starting Point: Proposed Core Framework



## Modern & Holistic

Framework designed for inclusion of modern science and diverse needs



## Matrix Sediment Standards Framework

Separate standards for ecological and human health protection across both direct contact and food web pathways



## Tiered Approach

Scientific framework for site-specific adjustment of matrix sediment standards



# Survey Overview



## Purpose: Gathering Expert Feedback

- Kickstart Scoping Phase of the Sediment Standards Project.
- Detailed feedback on current standards from environmental professionals and community.



## Methodology: Public & Professional Survey

- Online: May 30 to July 31, 2025
- Responses: 61 total, including 43 complete, 18 partial
- Channels: Site Remediation News, SABCS, LinkedIn, email



## Respondents: Experienced & Informed Audience

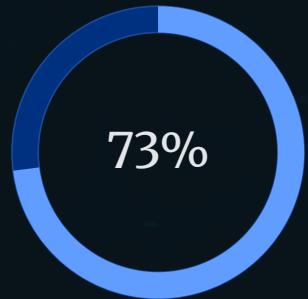
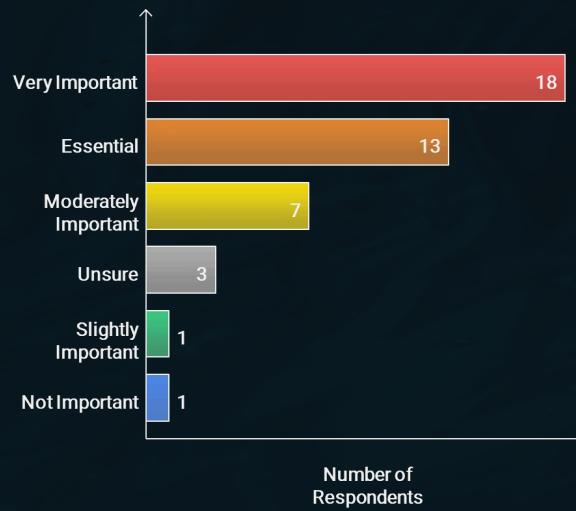
- Highly experienced and diverse: academics, consultants, industry, and regulators.
- Over 70% were "Familiar" or "Very Familiar" with current standards.

# Key Message #1 from Survey

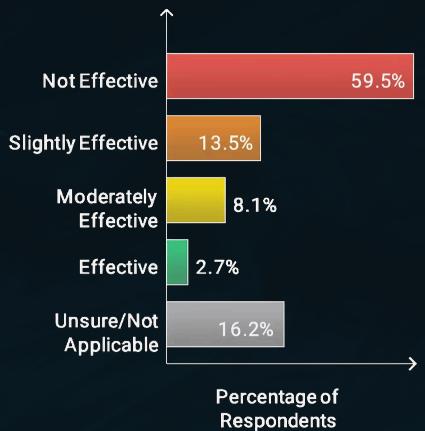
## Strong Mandate for Change



Support Modernization



Inadequate Protection



# Key Message #2 from Survey

## Clear Roadmap for Modernizing BC's Sediment Standards

Develop a scientifically robust, matrix sediment standards framework that protects ecological and human receptors from toxicity via direct and food pathway exposure.

Expanded tiered framework supporting bioavailability adjustments based on site-specific information.

It's important that modernization of the scientific framework include expansion of the contaminant list to address non-scheduled substances.

Expand Contaminant List



Incorporate Bioavailability



Formal Tiered Framework (Beneficial)



Dual Standard (Necessary)



# How We'll Engage Today

Four Themes based on the Interim Scientific Framework for Modernizing Sediment Standards

**Holistic Protection  
of Aquatic  
Ecosystems -  
Matrix Sediment  
Standards**

**Developing a Tiered  
Framework:  
Integrating Site-  
Specific Data for  
Sediment Standards**

**Modernizing BC's  
Sediment  
Standards:  
Prioritizing  
Approaches &  
Options**

**Weaving  
Indigenous  
Knowledge &  
Science into  
Sediment Standards**

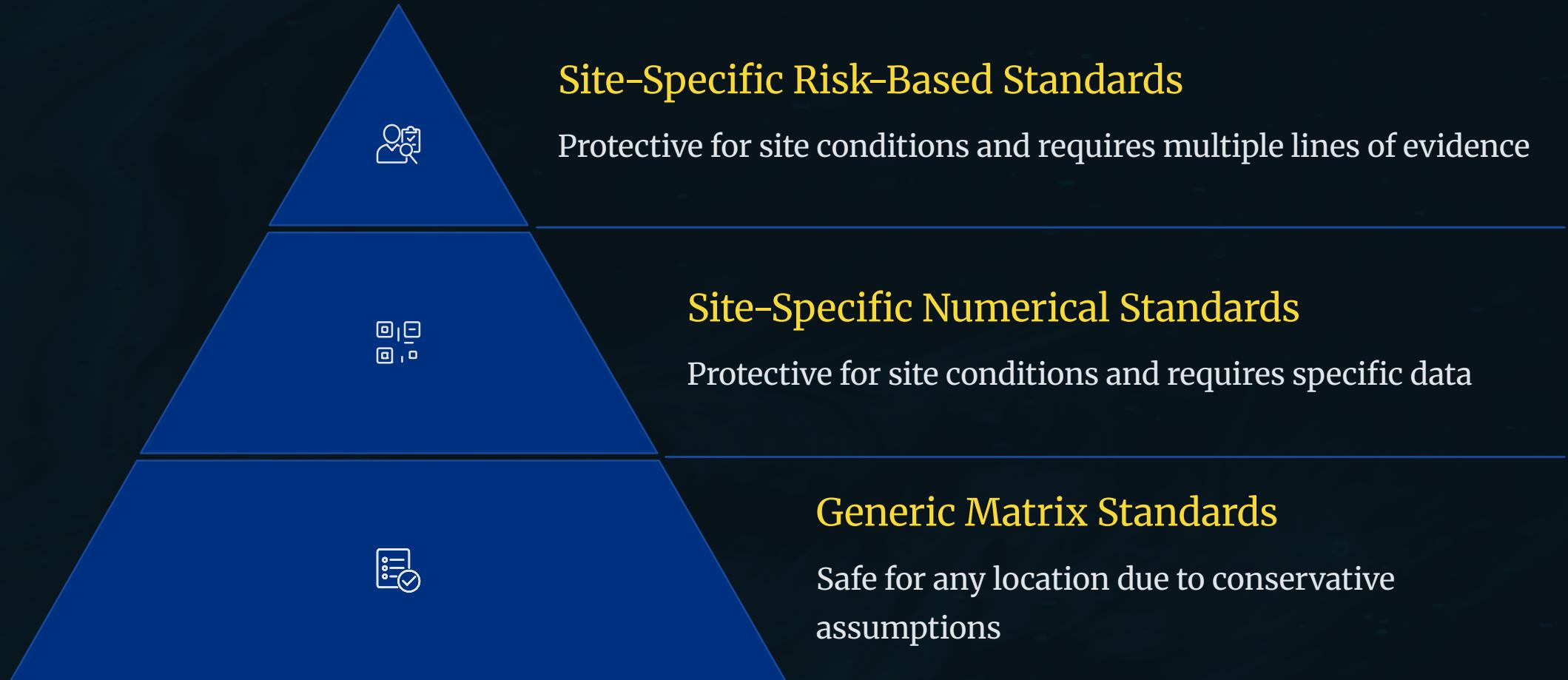
Each Theme includes

- Presentations + Interactive Discussion
- Presentations follow standard format
- Poll questions engage audience and responses documented in the SABCs White Paper

# Theme 1 - Matrix Standards for Holistic Protection



# Theme 2 - Tiered, Site-Specific Approach



# Theme 3 - Research Prioritization Framework

## Ecosystem & Human Health Protection

- Food Pathway Exposures
- Bioaccumulation
- Direct Exposures
- Indigenous Uses

## Tiered, Site-Specific Framework

- Site Conditions
- Criteria & Triggers
- Screening-Level & Detailed Risk-Based Approaches

## Non-Regulated Substances

- PFAS compounds
- Microplastics
- Pharmaceuticals
- Personal care products

## Mixture Challenges

- Interactive effects
- Additive toxicity
- Complex assemblages
- Background influences

## Strategic Planning and Practical Next Steps

What short-, mid-, and long-term actions can BC take to address these challenges and data gaps?



## Theme 4 - Weaving Indigenous Knowledges & Science



### A New Approach

Braiding Indigenous wisdom with Western science for holistic, place-based standards



### Proven Success

Learning from the Tsleil-Waututh Nation's successful Burrard Inlet case study



### Collaborative Scientific Framework

Engaging experts to weave knowledge into a modern technical framework



### Protecting Indigenous Use

Defining protection goals to sustain culturally important practices and values



# The Path Forward



## SABCs White Paper

- Document feedback from community engagement
- Refine Interim Scientific Framework
- Develop Prioritization Framework & Strategic Plan
- Finalize December 2025



## Scoping Plan & Roadmap

- Develop proposal for Phase 2 of the Sediment Standards Project based on White Paper



## Technical Working Groups

- Establish focused research groups based on prioritized topics



## Network Development and Expanded Engagement

- Continued engagement with all stakeholders
- Connect with potential partners for research initiatives



# Thank You

## Your Contribution

Your expertise is crucial for developing standards that truly protect BC's aquatic environments.

## Want to get involved?

- Technical Working Group
- Collaborator or Partner

## Contact Us

SABCs project team: [info@sabcs](mailto:info@sabcs)