BCDC Engineering Criteria Review Board

WHAT IT IS & HOW IT WORKS

OVERVIEW

What is the Engineering Criteria Review Board?

The Engineering Criteria Review Board (ECRB) is an advisory board that assists the San Francisco Bay Conservation and Development Commission (BCDC) in evaluating the safety of fills and structures on fills for projects within the Commission's Bay or Certain Waterways jurisdictions for which a Commission permit or consideration of a consistency determination is needed.

Board Composition

- 9 primary members + up to 4 alternates
- Eminent professionals in: structural, coastal, geotechnical, civil, and geologic engineering
- Members from private practice, government service, and academia
- Members volunteer their time and expertise
- BCDC's staff engineer serves as secretary to the ECRB

BENEFITS

What Are the Benefits of ECRB Review?

San Francisco Bay presents challenging conditions for development. Sites are generally underlain by soft sediments that present uniquely difficult engineering problems including:

- **Settlement**
- **Liquefaction and lateral spreading during earthquakes**
- **Slope instability and ground failure**
- **Wave action and other coastal processes**

The ECRB uses an **interdisciplinary approach** to provide a comprehensive review of a project's engineering design criteria, drawing on members' extensive experience with Bay Area engineering projects. The review helps assure that risk to property and life is minimized.

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LEGAL BASIS

Under What Authority Does the ECRB Operate?

State Law and Regulations

Section 66633(b) of the **McAteer-Petris Act** authorizes the Commission to appoint advisory committees. The Act requires the Commission to review all proposed fill projects and prohibits approving any that would be unsafe.

- **Section 66605(e):** Fill must be constructed in accordance with sound safety standards affording reasonable protection against unstable geologic and soil conditions, flood, or storm waters.
- **Section 66605(c):** Fill should be the minimum necessary to achieve the purpose of the fill.
- **The Safety of Fills Report recommended creation of the ECRB to provide technical advice ensuring projects are consistent with Bay Plan policies.**

Bay Plan Policies

The Bay Plan was prepared by the Commission to further implement the McAteer-Petris Act. The California Legislature incorporated the Bay Plan by reference as the Commission's policy framework. Findings and policies regarding safety of fills are found in **Part IV of the Bay Plan ("Safety of Fills").**

PERMIT PROCESS

What Role Does the ECRB Play in the Permit Process?

ECRB review typically occurs **prior to consideration of a permit application** by the Commission — usually during the "pre-application" phase — so the Commission has the benefit of ECRB recommendations in its decision-making.

Why Early Review?

- Allows time to resolve engineering issues before final design
- Avoids applicant expense of detailed analyses before ECRB confirms consistency with Safety of Fills policies

ECRB Review Typically Addresses:

- Whether design criteria are appropriate for existing site hazards and conditions
- Whether current and future flood risks (groundwater, coastal, riverine flooding, sea level rise) are adequately addressed
- Whether any criteria, design, or physical concerns remain unaddressed

Permitting staff use ECRB conclusions in project analysis and reports to the Commission. In some cases, engineering feasibility is an essential factor in the Commission's approval decision.

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PROJECT ELIGIBILITY

Which Projects Are Reviewed by the ECRB?

Only projects involving **fill in the Bay** (including BCDC's Certain Waterways jurisdiction) that present issues of safety of fills and of structures on fill are required to go through ECRB review.

- **Large or complex projects:** Presented to ECRB for preliminary evaluation before final design. May require additional reviews as detailed engineering analysis progresses.
- **Smaller or simpler projects:** May only warrant one ECRB review.

BCDC staff will inform the applicant if ECRB review is needed before the Commission acts on a permit application.

STANDARDS

What Codes or Standards Does the ECRB Use?

The ECRB applies members' expertise, experience, and judgment to applicable **Bay Plan policies** to evaluate appropriate engineering criteria. While the ECRB uses compliance with applicable codes (local building codes, design manuals, etc.) as a starting point, it does not rely solely on any specific standard code.

This approach enables the ECRB to:

- **Use standard codes when appropriate**
- **Recommend design criteria for projects not well-suited to standard codes (e.g., unusual building designs, special geological conditions)**
- **Ensure the latest and best engineering criteria for safety of fills can be incorporated into all reviewed projects**

SUBMISSION REQUIREMENTS

What Information Should Be Submitted to the ECRB?

Per **14 CCR section 10316**, ECRB review requires: "all geotechnical reports, all memoranda, correspondence, or other documents containing geologic findings, structural plans, engineering analyses including any coastal engineering analysis, design calculations, if required to support the applicant's or prospective applicant's analyses regarding geologic conditions or the safety of proposed fill, and architectural renderings of the proposed project."

General Project Information

- **Project Site Location —** aerial photos or vicinity maps and description of the project site
- **Project Description and Site Characteristics —** existing structures, site hazards (liquefaction, slope instability, seismology), project purpose, scope, proposed life, and schedule
- **Interested Party List —** names and email addresses in mail merge format (or stamped envelopes if postal only)

Geotechnical Reports and Other Documents Containing Geologic Findings

- **Soils and Geologic Data —** geology, subsurface conditions, soil profiles, test data (trenching, borings, cone penetrometer tests, etc.)
- **Soils and Geologic Analysis —** groundwater, liquifiable soils, corrosivity analysis, geotechnical recommendations
- **Static and Dynamic Slope Stability Analysis —** active faults, design earthquake criteria, peak ground acceleration, site specific Acceleration Response Spectra (CARS) curves (if available)

Project Engineering

- **Codes and Standards —** list of codes, standards, manuals, and specifications used; annotate if extensive
- **Basis of Design and Design Criteria —** performance objectives, structural vulnerabilities, acceptance criteria, and methods of analysis
- **Project Plans —** layout of proposed elements, BCDC jurisdiction boundaries, mean high-water line, topographic/bathymetric data
- **Structural Plans —** ideally at least 60% complete plans (30% may suffice if site constraints are well-defined and design criteria are clear)
- **Engineering Analyses and Design Calculations —** applicable ASCE 7 loads, how loads are calculated, and demonstration that criteria are satisfied

Coastal Engineering

- **Shoreline Characteristics —** geology, seasonal and long-term change, erosion or accretion trends, nearby retention structures
- **Shore Protection Features —** options considered, nature-based options, duration of protection needed, design and performance criteria
- **Coastal Engineering Criteria —** design wave conditions, tides, currents, tsunamis, current Ocean Protection Council (OPC) sea level rise projections, projected total water levels, groundwater elevation predictions
- **Coastal Engineering Criteria for Restoration —** current and future range of tidal components, current and future sedimentation or erosion rates, hydrodynamics, uplift or subsidence
- **Sea Level Rise Adaptation/Resilience —** amount of sea level rise proposed, time period, level of risk per current OPC guidance, and ways the project or shore protection can be adapted to projected SLR
- **Compliance with Bay Plan Safety of Fills Policy No. 4** regarding measures to prevent damage from sea level rise and storm activity

DEADLINES

When Should Materials Be Submitted?

DEADLINE	ACTION REQUIRED
45 calendar days before meeting	Submit written materials to BCDC staff for completeness review
30 calendar days before meeting	All materials must be reviewed and ready for submission to the ECRB
14 calendar days before meeting	Slide deck (PDF, ADA-accessible) posted on BCDC website

The ECRB encourages applicants to prepare a slide presentation in **ADA-accessible PDF format** for posting on the BCDC website. Failure to provide necessary materials by the scheduled deadlines may result in the project being postponed to a later ECRB agenda.

MEETING PROCEDURE

How Is ECRB Review Conducted?

When and Where Does the ECRB Meet?

- Monthly meeting dates are established at the beginning of each calendar year
- Meetings are held in a hybrid format so members of the public may attend online
- The applicant's presentation team is encouraged to attend in person
- At least 10 calendar days before the meeting: a notice/agenda is mailed to ECRB members, interested parties, and members of the public
- Staff typically prepare a report addressing issues to be discussed at the meeting

Meeting Format (in order):

- Applicant/engineering consultants present engineering criteria, analyses, calculations, designs, and outstanding issues
- ECRB members ask questions and offer recommendations
- Project representatives respond to questions and comment on recommendations
- Board takes questions and comments from the public
- Board chair summarizes findings and conclusions, and polls ECRB members on whether a follow-up meeting is recommended.

Each project review typically takes about **two hours**. No more than two projects are reviewed per meeting; often only one project is reviewed.

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ECRB OUTCOMES

What Action Does the ECRB Take?

Meetings typically conclude with one of two outcomes:

Follow-up Meeting Requested

- Requested if the ECRB finds that selected engineering criteria are not appropriately considering BCDC's laws and policies
- ECRB will identify appropriate criteria and may recommend another meeting after project revisions
- ECRB Secretary will summarize conclusions and recommendations and provide comments to the applicant as soon as practicable

No Follow-up Meeting Needed

- ECRB may recommend special monitoring or engineering criteria
- Secretary prepares a summary letter of the meeting, outstanding issues, and any special criteria
- Permit analyst may include the letter (in whole or in part) in the staff report to the Commission
- Permitting staff may incorporate ECRB recommendations as permit conditions for the Commission's decision

OTHER REVIEWS

Is the ECRB the Only Review of Engineering Plans?

In addition to ECRB review, **BCDC's staff engineer** independently reviews engineering plans and project specifications to determine compliance with BCDC's applicable laws and policies. This review may occur before or after the ECRB review, depending on completeness of plans and project complexity.

Permits may also be required from other **local, state, or federal government agencies** with their own authority to regulate engineering aspects of a project. Obtaining any such other required entitlements is the responsibility of the project applicant.

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