Group 1
Session C4

Permitting Constraints Influence the Remedial Design

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Permitting Strategy

Policies and regulations that govern marine debris removal, dredging, the placement of fill, and other in-water construction activities, as well as consultations with natural resource agencies and historic preservation offices can have a significant impact on remedial design for contaminated sediment sites.

In the early stages of a project (prior to completing the remedial planning documents):

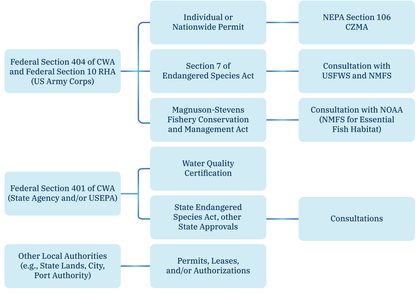
- Identify relevant policies, regulations, and key constraints
- Engage the permitting agencies, stakeholders, and community early and often
- Develop a permitting strategy that includes a comprehensive project permitting plan

A constraints analysis can help to guide the alternatives analysis and remedial design and avoid unanticipated and unnecessary costs and delays.

Additional approvals may include:

- USEPA for Ocean Disposal or Other
- NOAA under MMPA

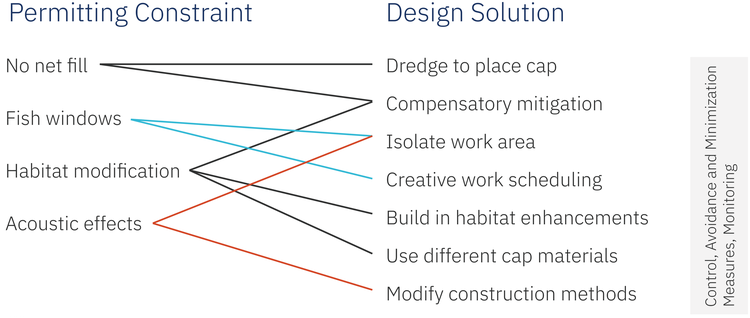
Typical Permitting Process Overview

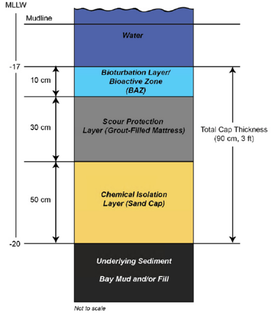


Permitting ALPHABET SOUP

CWA = Clean Water Act
CZMA = Coastal Zone Management Act
EPA = U.S. Environmental Protection Agency
NEPA = National Environmental Policy Act
NMFS = National Marine Fisheries Service
NOAA = National Oceanic and Atmospheric Administration
RHA = Rivers and Harbors Act
USACE = U.S. Army Corps of Engineers
USFWS = U.S. Fish and Wildlife Service
MMPA = Marine Mammal Protection Act

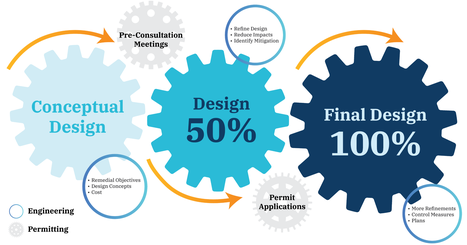
Permitting Constraints Will Influence the Design





Example of building habitat enhancements into cap design

Effective permitting requires proactive planning and stakeholder management, and knowledge of the regulatory process.



Emerging Issues to Consider

Environmental Jusitice

- Engage the community
- Improving waterfront access
- Offer education and employment opportunities

Sea Level Rise/Climate Change

- Design to address rising water levels
- Assess extreme weather events
- Post construction monitoring of cap stability and longevity

Mitigation Approaches

Remove marine debris/fill

Living Shorelines

During Construction

After Construction

Identify & Plan for Potential Permitting Constraints

Commercial fishery species such as Pacific herring

Endangered species, like green sturgeon, drive work windows

Shoreline modification impacts

Acoustics impact marine mammal

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