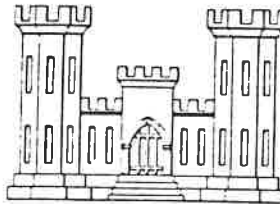


SEDIMENTATION IN THE  
SAN FRANCISCO BAY SYSTEM  
CALIFORNIA

BY

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4. RETURN TO: BMD

## WORKPLAN UPLAND REUSE STUDY PHASE I

### Project Objectives

The objectives of the upland/reuse studies of the LTMS are to identify, develop, and analyze site-specific plans for the use of dredged material as a resource in the San Francisco Bay and Sacramento/San Joaquin Delta areas, prepare implementation strategies for those plans, and provide upland capacity for dredged material disposal. This is the first of three phases that will be conducted as separate but linked studies. The objectives of this study are to (1) comprehensively identify potential site-specific upland disposal and reuse projects surrounding San Francisco Bay and the Delta for material dredged from San Francisco Bay, including processing and end-use sites; (2) gather extant information regarding potential projects; (3) use the information to perform a preliminary screening and analysis of those projects; (4) identify constraints and opportunities related to the projects; (5) identify and analyze major issues relating to the projects; (6) identify case studies and/or demonstration projects of reuse strategies; and (7) recommend actions that should be taken in the next phase of the upland/reuse studies.

### Approach

Under the direction of the Upland/Reuse Study Manager and the oversight of the Uplands/Reuse Work Group and the San Francisco Estuary Project Dredging Subcommittee, the study will follow the standard approach of literature review, data and map collection from key agencies and actors, research, analysis, and recommendations. The study will include a comprehensive identification of potential projects paired with sites, iterative screening of sites to identify the most desirable and feasible project/sites, and greater data collection and analysis of more feasible sites.

### Geographical Project Listing

1. **Literature Search And Resource Identification.** Obtain extant data on reuse and upland disposal, compile list of and make initial contacts with organizations and individuals involved in this area.

Sources include, national and regional Corps, Fish & Wildlife Service, NOAA, USGS, Navy, Department of Water Resources, BCDC, Coastal Conservancy, Department of Fish and Game, local governments, Ports, Academics, land trusts, Bay Area Council, environmental and interest groups.

Documents to be used include: Corps studies, BCDC studies, Port of Oakland reports, and other information from the above or other groups.

### Products

listing of contacts and documents.

## 2. Define Study Parameters and Evaluation Criteria

For each reuse and disposal strategy, identify the parameters to be used to determine the suitability of specific geographic sites. Strategies to include: use of material in wetland creation in diked baylands, approved Bay fills, levee maintenance, use as sanitary landfill daily cover, capping and lining material for landfills and toxics sites, and upland building material, and the establishment of on-site upland drying and storage facilities, regional upland rehandling and treatment facilities, and other identified uses.

Parameters will include: geographic, volume/capacity, engineering, economics, environ impacts, water quality impacts, land use, ownership, project proponent(s), regulatory controls, project benefits/costs, and other factors as described below.

- a. **Geographic.** Site location, site conditions, i.e. hydro-geology, distance to dredging projects and/or end-use site.
- b. **Volume/Capacity.** The amount of material that can be disposed taking into account compaction of dry material, settlement of disposal site, and throughput of rehandling sites. Specify volume and timing limitations if known, i.e no disposal in rainy season.
- c. **Engineering.** How material should be moved to and from site; site improvements, ie. containment levees, pumping facilities, etc.; material processing and handling.
- d. **Economics.** Costs (where appropriate) of site acquisition; site improvements; importing, handling, and exporting material; managing and monitoring sites; site closure; other costs. Dollar value of projects such as sand or clay for building material; flood control or other economic benefits.
- e. **Environmental Impacts.** Potential detriments and benefits of projects at project site, along alignments where material will be transported, and areas where material will be used (if known). Identify potential mitigation measures.
- f. **Water Quality.** Address surface and groundwater impacts on and off-site from projects. If possible link to potential environmental impacts. Identify potential mitigation measures.

- g. **Land Use.** Present land-use, development proposals, planning and zoning of site, Williamson Act, and surrounding land use. Incompatibilities resulting from these factors.
- h. **Ownership.** Public, private, potential for acquisition.
- i. **Project Sponsor(s).** Potential private or public sector project sponsors, managers, eventual sponsors (ie. wetland creation sites).
- j. **Regulatory Controls.** State and federal programs applicable to sites, including Section 404, NPDES, BCDC, other. Flag constraints.
- k. **Benefits/Costs.** Comparison of the economic, environmental, and social benefits and costs of the projects.

For each of the study parameters define the criteria that will be used to evaluate and rank alternative projects and sites. Wherever possible, use quantitative measures. Consult with Upland Studies Work Group to finalize parameters and criteria.

#### Product

listing and definition of parameters and criteria for those parameters.

#### 3. Construct and Prepare Data Base

Construct data base for reuse sites to contain and analyze data on study parameters. Enter available information into database.

Product An electronic database, potentially a Geographical Information System (GIS) database, containing available, pertinent information, that is appropriate to analyzing reuse projects and issues, and that can be easily queried, updated, expanded, and amended. The database will be configured to perform quantitative and/or qualitative analysis and ranking of sites based on the parameters and criteria included in the study.

#### 4. Identify Data Gaps

Identify gaps in information gathered to date. Divide the acquisition needs into short-term needs that will be filled as part of this study, and information that will be acquired in the second or later studies. Consult and reach agreement with Upland work group as to level of effort for initial and later data entry and analysis iterations as discussed below.

#### Products

listing of data gaps.

## 5. Gather and Enter Data

Information will be gathered by data queries of sources identified earlier, or by a limited amount of original research or field work. The study area will include the San Francisco Bay and Sacramento/San Joaquin Delta regions. Study will use an iterative approach wherein a series of filters based on the parameters and their criteria will be used to progressively reduce the number of sites to be considered. Thus, more detailed and extensive information will be gathered for the more desirable and feasible sites.

### Products

Electronic data base.

## 6. Analyze and Rank Project/Sites

As the data are entered in the data base, the database will be queried to identify and rank the specific geographic sites which are most suitable for particular reuse and disposal strategies. Therefore, there will be a series of data entry and ranking iterations. Initial analysis will be conducted using the most straightforward, available, and quantitative parameters to minimize effort and provide an objective basis for identifying the most desirable sites. The ranking will be based, where possible, on quantitative analysis for each parameter. However, the ranking of sites based on all the parameters will necessarily be qualitative, and sites will be placed in one of the following categories: (1) infeasible, (2) insufficient data to rank, (3) low feasibility, (4) moderately feasible, (5) highly feasible, or (6) as existing or proposed demonstration projects. Project parameters will be linked to the issue areas discussed below, i.e. where project will impact existing site wetlands identify extent and location of impact and refer to discussion of wetland impact issue.

For those reuse/site combinations identified moderately feasible or better, a conceptual implementation plan, site-specific benefits and costs, and institutional, environmental, engineering, economic, and other opportunities and constraints will be developed. For low and infeasible sites, the constraints rendering sites infeasible will be documented, so that if the identified constraints are later resolved, these sites can be reevaluated.

### Products

An electronic database containing the information generated in the study. Hard copies of the data including (1) regional maps with sites identified; (2) site-specific maps depicting pertinent data; (3) site-specific data addressing project parameters; (4) site ranking and analysis; and (5) scoping level implementation plans for sites moderately feasible or better.

### Issue Areas

The Upland/Reuse study is intended to use a problem-solving approach. Many or all of the specific projects will share constraints or issues that are better addressed cumulatively rather than on a project by project basis. The study is intended to define the important issues and establish a process to address and resolve them, if possible.

1. **Identify Issues.** Identify and define issues raised by the reuse projects, identified through data acquisition efforts and discussions with project proponents, regulatory and resource agencies, and interested parties.

#### Products

A listing and discussion of issues.

2. **Analyze and Prioritize Issues.** Research, analyze and qualitatively rank each issue area in regards to (1) importance to reuse projects, and (2) difficulty of analysis and resolution.

#### Products

Analysis and ranking of issues.

3. **Prepare Issue resolution Plan.** For each issue area, (1) provide a suite of alternative strategies to resolve the issue; and (2) recommend actions to be taken in the succeeding study to further study and resolve the issue, or document why the issue should not be studied further.

#### Products

Written plan to resolve issues.

### Demonstration Projects

Demonstrations projects and case studies are invaluable tools to show the feasibility and practicality of reuse projects, and/or provide invaluable information on how to implement reuse projects. Information that cannot be gained through a desk-top analysis. For each of the reuse strategies, identify a completed or ongoing, local project to use as a case study, or recommend projects to serve as demonstration projects. Preferably, demonstration projects will already have a project sponsor and will occur within the LTMS study period. However, information gathered from projects extending beyond the study period will be used in the periodic reevaluation and updating of the LTMS identified in the LTMS study plan.

#### Products

Written listing of demonstration projects and case studies with analysis.

### Prepare Findings and Recommendations

Document the findings of the study and present recommendations for further actions based on the findings.

### Prepare Introduction, Objectives, & Methods Sections

Introduce topic, state the project need and objectives, methods used and assumptions of the study.

### Prepare Executive Summary

A brief summary of the study and its findings.

### Revise and Produce Second Draft Report

A second draft of the report will be prepared that responds to public and agency comments.

### Prepare Final Report

A final report will be produced that responds to comments on the revised draft, includes all information generated in the report, and is presented in the following format:

- a    **Executive Summary**
- b.   **Findings and Recommendations.** Present the findings of the study and the recommendations for further studies, actions, and demonstration projects;
- c.   **Introduction.** Introduce the topic, the LTMS, state the need for the project, provide any needed background, and present the goals, methods, and assumptions of the report.
- d.   **Part I. - Reuse Projects**
  - (1) Regional maps showing site locations;
  - (2) Lists of sites by ranking;
  - (3) Site specific maps with associated data, preliminary evaluation and ranking;
  - (4) Site-specific data to include, reuse strategy(ies), proposed implementation plan, project proponent(s), capacity, haul method and distance, site conditions, ownership, land use, regulatory req., benefits, costs, constraints/opportunities, and data needs;
  - (5) Low or infeasible sites may not include all data but will include documentation of why they were judged infeasible; and

- (6) Sites ranked moderately feasible or better will include proposed implementation plan.
- e. Part II. - Issue Areas. Identification and analysis of major issue areas, particularly those constraining implementation of projects. Ranking of issue areas and proposed study plans.
- f. Part III. - Case Studies/Demonstration Projects. Identification of case studies and proposed demonstration projects.
- g. Bibliography
- h. Technical Appendices

#### Schedule

All dates are from the Notice to Proceed.

- 1. Notice to Proceed.
- 2. One week: meet to resolve questions.
- 3. One month: meet to discuss results of literature search
- 4. One month: submit draft parameters and criteria
- 5. One month: meet to discuss data base selection and use.
- 6. One month, two weeks: submit final parameters and criteria
- 7. Three months: submit detailed specifications for data base and results of test run.
- 8. Three months, two weeks: submit list of data to be acquired
- 9. Three months, two weeks: submit draft issue areas and demo plans.
- 10. Four months: meet to discuss progress.
- 11. Six months: submit status report including draft data results
- 12. Seven months: submit second draft issue areas and demo plans
- 13. Twelve months: submit draft report
- 14. thirteen months: submit second draft
- 15. Fourteen months: submit final document