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The choice between upper or lower limits would depend on the response (e.g., for survival, one would use the lower 95% TL). Note that the variation among dates, rather than the variation among laboratory replicates, is of interest, and that responses from several dates are required to construct the tolerance limits. Each response mean (of laboratory replicates) for a single date is considered one observation only for calculating the mean, SD, and TL. Values of t for one-tailed $\alpha=0.05$ are 2.13 for $n=5$ dates; 1.83 for $n=10$ dates; and 1.64 for $n=\infty$. The width of tolerance intervals, unlike confidence intervals, does not decrease with sample size except for the dependence of t on sample size (i.e., confidence intervals decrease in width with increasing sample size because the standard error depends on sample size; SD does not depend on sample size). As a result, there will be severe limitations on statistical power if temporal variability in response is high. These limitations cannot be overcome by conducting additional tests. Our prediction, based on experience, is that the variance among dates will be high, unless many samples from a large area are composited on each date.

A time series for responses to a reference sediment could be constructed if the reference area was used repeatedly. One or two years of testing reference and dredged material simultaneously would probably provide sufficient data; at least one year would be required to encompass all four seasons. Ideally, the reference data should come from samples taken on randomly selected dates, but we doubt that this would ever occur in practice. There may also be serial correlation among dates, which would lead to an underestimate of the real SD.

2. Changes in sensitivity of the test organisms

If the response to dredged material is to be compared to responses to reference sediment measured on other dates, then investigators must ensure that the sensitivity of the test organisms is similar among dates. The best way to do this is to compare results of reference toxicant tests. Suppose that an investigator tests dredged material on April 31, and conducts a reference toxicant test at the same time. The reference toxicant test results would be compared with the two-sided tolerance interval for reference toxicant results from previous dates. If the reference toxicant result for April 31 were within the tolerance interval, then it would be reasonable to conclude that the test organisms were similar in sensitivity to organisms used in the past (i.e., when the response to the reference sediment was measured), and the response to the dredged material would be compared to the appropriate tolerance limit as discussed in Point 1 above.

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The procedure described above seems simple, and is similar to comparison of reference toxicant results to warning or control limits. However, there is one important difference, which creates a fatal flaw in the procedure. Warning and control limits are 95 or 99% tolerance limits. When a reference toxicant result is compared to these limits, we are interested in whether the result is significantly different from the responses measured previously (i.e., out of range or control). Similarly, when the response to dredged material is compared to the tolerance limits for responses to a reference, we are also interested in whether the response to dredged material is significantly different from the response to the reference. Under these circumstances using $\alpha=0.05$ or 0.01 is appropriate. However, when we compare a reference toxicant result from a specific date (e.g., April 31) to tolerance intervals based on previous values, we are not really interested in significant differences. Instead, we want to know whether the April 31 response is the same as or similar to previous responses, as an indication that the sensitivity of the test organisms has not changed. The absence of a significant difference does not necessarily indicate that there is no difference. Thus, it would be safer to use 75% tolerance limits rather than 95 or 99% tolerance limits. The selection of 75% tolerance limits is somewhat arbitrary, but follows from the common practice of pooling error terms or dropping interactions only when $P>0.25$. However, if we use 75% tolerance limits, then 25% of the reference toxicant results will be outside those limits purely by chance. Thus, at least 25% of the time, we will conclude that the sensitivity of the test organisms is not similar to that in past tests, and that we are not justified in comparing the response to dredged material to past responses to a reference sediment. At that point, we would presumably have to go back and collect and test dredged and reference sediment simultaneously, negating any cost savings associated with the periodic reference approach.

Based on the above considerations, utility of the periodic reference approach is restricted to conditions where:

1. Response data are available for the reference sediment for several dates spanning at least a year.
2. Variance among dates is low, and there is no serial correlation.

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3. Reference toxicant results (and the sensitivity of test organisms) are consistent over time, so that any result within the 95 or 99% tolerance limits is similar to the overall mean

or

we are prepared to accept a 25% failure rate when the periodic reference area approach is used, and reference toxicant results are compared to the 75% tolerance limits for past data.

We doubt that even one of these conditions would be met in the majority of cases in which the periodic reference area approach would be used; all three conditions would never be met.

From the above reasoned viewpoint, the inclusion of statistical procedures for the periodic reference approach in Appendix D is not a useful exercise. We suggest that the statement be made in the Main Text that, as per Decision 2 of the Minutes (Sept. 21), the statistics appendix will not provide guidance for handling of a periodic reference, and that it be the onus of the applicant to "provide appropriate statistical interpretation which is technically defensible". Further, we suggest that the complications incumbent with the adoption of this approach and the restrictions on its adoption be clearly stated in the manual.

We welcome your response on whether this is a reasonable alternative to including procedures for a reference approach whose utility is technically questionable and rarely recommended.

Yours truly,

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Responses to BPC — Bay Planning Coalition, letter dated July 19, 1996

1. The LTMS agencies have selected Alternative 3 as the preferred alternative long-term approach to dredged material management for the San Francisco Bay area. Alternative 3 calls for increased beneficial use of dredged material and increased ocean disposal, along with decreased in-Bay disposal. Its selection was based on the programmatic evaluation in this EIS/EIR, and on the determination that Alternative 3 in fact best meets the overall LTMS goals. The LTMS agencies believe that the information and analyses presented in the EIS/EIR are appropriate and adequate for the programmatic decisions being made, and that this EIS/EIR fully complies with the requirements of NEPA and CEQA. The LTMS agencies recognize, however, that until beneficial use alternatives (including UWR sites) become more available, alternatives to aquatic disposal at in-Bay and ocean disposal sites may not be practicable for many projects. Accordingly, the EIS/EIR repeatedly points out that the overall dredged material distribution goals of Alternative 3 cannot be fully realized immediately. Section 6.5 describes the "transition" or phase-in approach the LTMS agencies intend to follow during the early years of implementing Alternative 3. This approach is intended to ensure that progress is being made toward one overall LTMS goal — reducing in-Bay disposal — while allowing time for another overall LTMS goal — increased beneficial reuse — to become practicable for more dredging projects through the development of additional UWR sites.
2. We agree as to the benefits of the Sonoma Baylands project, and that the actions needed to implement Sonoma Baylands were complex and difficult. To a great extent this is because historic practices, funding, and policies were focused on aquatic disposal rather than UWR. The LTMS agencies believe UWR can be implemented as a more 'common occurrence' if local, state, and federal policies are focused on UWR, and interested parties are supportive of UWR projects. The LTMS agencies will be working to help ensure that UWR can be a more common practice rather than the exception, and hope that the BPC will be working toward this end as well.
3. There is no stand-alone "upland reuse alternative." Alternative 3 (like all the alternatives evaluated in the EIS/EIR) is a combination of dredged material management in all three placement environments. For many projects, beneficial reuse of dredged material is "practicable" today, and the LTMS agencies are working to ensure that beneficial reuse will be "practicable" for an increased number of projects as time goes on. Please see the response to BPC comment 1 (7/19/96 letter).
- 3a(1). Please see the response to BDAC comments 2 and 6.
- 3a(2). Please see the response to BDAC comment 3.
- 3b(1). Please see the response to BDAC comment 4.
- 3b(2). Please see the responses to BDAC comment 6 and BPC comment 1 (7/19/96 letter).
- 3c. The alternative long-term management approach selected as a result of the EIS/EIR process is, itself, an overall dredged material "management framework" for the Bay area. In addition, a national framework is provided in the USEPA/USACE document, *Evaluating Environmental Effects of Dredged Material Management Alternatives — A Technical Framework* (USEPA and USACE 1992). The sediment testing manuals for Ocean Disposal (USEPA and USACE 1991) and inland waters (USEPA and USACE 1998) are tiered under this national evaluation framework. The specific sediment testing requirements at any given time will be reflected in the national guidance and in the Management Plan in force at that time. Currently, minimum testing requirements for in-Bay disposal are contained in Public Notice 93-2 (PN 93-2). The LTMS agencies agree that PN 93-2 should be updated; any such update will be reflected in the RIM and in the Management Plan. Please also see the response to BDAC comment 5.

See also the responses below to BPC comments 20 and 20a through 20y, which address the issues raised in the attachment to the BPC 7/19/96 letter, titled *Sediment Quality Testing: Issues Related to*

the Testing Guidelines for Dredged Material Disposal at San Francisco Bay Sites (see pages R-235 through R-269 of this appendix).

4. With regard to the comment about a Regional Testing Guidance Manual, please see the response immediately above to BPC comment 3c.

With regard to the comment about the environmental and economic analysis establishing the basis on which to choose alternative disposal options, see the response to CMC comments 2 and 3.
- 4a. The LTMS agencies agree that some progress has been made towards achieving LTMS goals. However, the LTMS agencies believe that the existing economic and environmental information support the adoption of Alternative 3. Please see the responses to Benicia comment 5, BPC comment 7a, and Oakland comment 33c.
- 4b. Please see the response to Benicia comment 5.
5. The LTMS agencies agree that significant progress has been made in recent years in improving dredged material management and increasing beneficial reuse. However, more can be done and it is important to capture not only recent experience, but also the overall LTMS goals, in a broad new regional policy approach so that we can continue to reflect the National Dredging Policy and do not slip back toward the days of "mudlock."
6. The LTMS agencies believe that the economic discussions in the EIS/EIR are appropriate for comparative purposes and for the programmatic decisions being made. Sections 7.3.1 and 7.3.2 discuss potential federal and state financing options, respectively. In addition, section 7.2.2 discusses possible fee and credit systems that could be used to help offset costs of beneficial use projects. Like the commentator's idea of a new regional tax, many of these options are outside the LTMS agencies' authority to institute independently. However, a new discussion of a sector-wide tax has been added to the list of financing options in Chapter 7 (see section 7.3.2.5).
- 7a. The EIS/EIR includes an overall, worst-reasonable-case economic evaluation that the LTMS agencies believe is adequate and appropriate for the programmatic decisions being made at this time. This evaluation includes a range of costs for various aspects of the dredging and disposal process, so that individual dredgers can consider potential effects given their own specific dredging project. In addition, please see the response to GGPA comment 2.
- 7b. The "transition" approach discussed in section 6.5 was designed in part to reflect the COE's budgeting cycle. In addition, WRDA 1996 made significant changes in the opportunities of federal cost-sharing compared to the requirements in place at the time the Draft EIS/EIR was published. Regarding the COE only paying for what they have paid for historically, the COE San Francisco District has already begun requesting increased O&M funding consistent with the preferred alternative in this LTMS policy EIS/programmatic EIR, and will revise its composite EIS for maintenance dredging in the Bay on the same basis. Of course, actual funding will always remain subject to appropriations. However, the LTMS EIS/EIR and the revised COE Composite EIS should represent a strong foundation for maximizing federal funding for Bay area dredging, at the same time that projects nationwide are competing for a shrinking federal budget.
8. Federal cost-sharing requirements themselves are not changed by any local actions of the LTMS agencies. It is true that the amount of federal cost sharing available to a particular project under existing requirements may differ from past scenarios. However, since the Draft EIS/EIR was published, Congress included significant changes to cost-sharing authorities in the Water Resources Development Act of 1996. For example, the COE may now cost-share for upland disposal activities in many circumstances, subject to overall Congressional appropriations and available Operations and Maintenance funding. In any event, any particular port dredging project need not be held up even if its federal cost-sharing effectively decreases, to the extent that meeting the increased port share remains

practicable as defined under the Clean Water Act Section 404(b)(1) Guidelines (40 CFR Part 230). Also see the response to BPC comment 1(7/19/96 letter).

9. "True" cost analyses cannot be conducted without a specific upland disposal site and its specific financing arrangements to evaluate, and thus can only be done on a project-specific basis. However, please see the responses to BDAC comments 2 and 6 and BPC comment 7a.
10. Many of the indicated component costs of dredging — dredging and hauling, surveying, sampling and testing, disposal site preparation, and mobilization — are included in the EIS/EIR. Also see the discussion of costs, which includes a list of assumptions, in section 6.2.3 and the response to BPC comment 7a.
11. Due in large part to the active support of the Bay Planning Coalition and other interested parties, since the Draft EIS/EIR was published Congress included in the Water Resources Development Act of 1996 significant changes to cost-sharing authorities and requirements. For example, the COE may now cost-share for upland disposal activities in many circumstances, subject to overall Congressional appropriations and available Operations and Maintenance funding.
12. The LTMS agencies agree that cost-sharing between dredging project sponsors and upland project proponents can be an important means of both making beneficial reuse practicable, and reducing overall cumulative effects. For example, the LTMS agencies are working to coordinate projects with DWR and the CALFED program where appropriate, as suggested in the comment. Also, please see the new section 2.2.5 in the Final EIS/EIR regarding the coordination with CALFED.
13. Ports up and down the west coast of the U.S. must all comply with similar environmental requirements. Of course, the availability of appropriate, practicable dredged material management alternatives differs from area to area, and the LTMS agencies agree that these differences can affect inter-port competitiveness. However, factors unrelated to dredging (e.g., including distance between each port and its specific Pacific Rim trading partners, and distance from each port to the ultimate markets for the goods entering it) also fundamentally affect competitiveness. Project-specific determinations of practicability of disposal alternatives for Bay area dredging projects will take these issues into consideration, as appropriate.
14. Overall, the EIS/EIS does consider volume programmatically, per placement environment. And physical characteristics are discussed in Chapter 3. Regarding the comment that Alcatraz could be redredged, redredging Alcatraz would presumably be done to allow more dredged material to be disposed more quickly and to prevent mounding from becoming a navigational hazard. However, this would not address water quality and habitat concerns associated with high-frequency disposal, as discussed in the EIS/EIR. Also, sediment quality deep in the existing mound is highly questionable, and redistributing it may have other environmental consequences. Finally, developing disposal capacity for re-dredged material would be similarly difficult to developing capacity for newly-dredged material. Please see the response to GLDDC comment 4.

Regarding the need for Confined Aquatic Disposal (CAD) sites, please see the response to Oakland comment 8.

Regarding the comment that soft maintenance material should not go to the ocean site, there is no physical or environmental reason that fine-grained maintenance material may not be disposed at SF-DODS. In fact, the impact analysis in the SF-DODS EIS (EPA 1993a) assumes that such material is disposed there.

15. Salinity levels of San Francisco Bay sediments are a principal issue for dredged material reuse in the Delta. To date, only relatively low salinity materials have been used in demonstration projects. The LTMS agencies are coordinating with the CVRWQCB to clarify acceptable salinity levels, loading rates, or management techniques for various reuse scenarios. The volume estimates discussed in

Appendix N specifically reflect consideration of salinity and other constraints as to what extent Bay area dredged material is likely to be appropriate for reuse in the Delta.

16. The LTMS agencies agree that restoration projects should be consistent with regional planning efforts to the extent possible (see EIS/EIR section 5.1.2.1). The work needed to bring reuse sites online is being done on a project-by-project basis. For example, various potential restoration projects are currently being actively planned and evaluated, which could help meet the goal of sending 40 percent of dredged material to UWR sites, including the Hamilton Wetland Restoration Project and the Montezuma Wetland Restoration Project. Also, please see EIS/EIR section 6.3.2. Please see the responses to BPC comment 18, CAHMPC comment 6, and SC-LPC comment 4.
17. Statement noted. The discussion of "fish windows" for the Carquinez Strait and other in-Bay disposal sites has been substantially revised in the Final EIS/EIR (see section 5.1.2.2 and Appendix J). The fish window at the Carquinez Disposal Site was proposed in the Draft EIS/EIR as a mechanism for public review and comment. There is evidence that suggests that chinook salmon may avoid the area of the Carquinez site during periods when it is used for dredged material disposal. Should such use of the site imperil a particular run, there is a legal basis under the Endangered Species Act to close the site during the time period of that salmon run. Such action was proposed by the USFWS and NMFS for the period, occurring from January 1 through May 31 of each year. However, after further consultation with the resource agencies, LTMS is proposing to minimize disposal during the indicated time period as much as possible as opposed to completely restricting it. In addition, overall disposal volumes for the site will decrease, as discussed in section 6.5 (the transition to Alternative 3).
18. The EIS/EIR is a programmatic, or planning-level document. The economic evaluation was done primarily for disclosure purposes. Further environmental and economic evaluations are still required for each proposed project. Also, please see the response to Chevron comment 2.

Please see the responses to BDAC comment 2 and BPC comments 1, 2, and 3.

As section 5.1.2.1 of the EIS/EIR explains, a coordinated effort to develop regional habitat goals is in progress through the coordination of numerous planning and regulatory efforts focused on the recovery of regional wetland and other natural resources. Agency perspectives on goals affecting wetland restoration projects are being addressed and agreements adopted in the Wetlands Ecosystem Goals Project. The Wetland Goals Project is a voluntary, collaborative effort among many of the agencies and public interests involved in local wetlands management and regulation. This project will produce recommendations for planning and designing wetlands restoration projects. A policy-level mitigation measure in section 5.1.2.1 states that LTMS agencies will be consistent with these plans. Please see the response to BPC comment 16.

The LTMS agencies are working to coordinate projects with DWR and the CALFED program where appropriate. Also, please see the response to BPC comment 11 regarding new authorities under WRDA 1996.

Please see the response to BDAC comment 5 and BPC comment 3c above.

Please see the response to CMC comments 2 and 3.
19. The LTMS agencies intend to continue working with the ports and dredging industry, as well as with environmental groups and other interested parties, to implement the overall LTMS goals. The long-term policy direction described in Alternative 3 best reflects those overall LTMS goals and, although this would be a change from past practices, Alternative 3 is not a departure from "the well conceived goals and objectives" of the LTMS.
20. The Bay Planning Coalition report is focused on the need for the LTMS agencies to create and revise testing guidelines to better address the sediment testing program for dredging projects. The report cites

numerous examples of ways in which the BPC believes current guidelines do not appropriately address sampling design or the interpretation of sample results. The EIS/EIR (section 3.2.5.4) describes, in an appropriate level of detail, the issues and current practices regarding sediment testing. The EIS/EIR also explains in sufficient detail why sediment contaminants are of concern and why, in many instances, the government requires testing of sediment for these contaminants (sections 3.2.2.2 and 3.2.2.3). The LTMS agencies agree that the testing guidelines contained in PN 93-2 do not provide a comprehensive effects-based sediment characterization as called for in the Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230), and that there should now be a revision to these interim testing guidelines based on the newly-adopted EPA/USACE national sediment testing guidelines (the ITM).

Early in the scoping process for the EIS/EIR, the LTMS agencies decided that it would *not* be appropriate to address the details of sediment testing in the EIS/EIR for the following reasons:

- (1) The level of document detail (i.e., the EIS/EIR is a long-term, programmatic planning document that, of necessity, takes a generic approach, while the requested sediment quality testing guidelines would necessarily need to be much more detailed and specific, and would in any case be fully addressed elsewhere);
- (2) Details of testing and evaluation procedures are expected to change over time, and specific requirements would be reflected in any LTMS Management Plan and/or RIM in place at a given time;
- (3) There are other processes outside the scope of the EIS/EIR by which regional guidelines and protocol can be developed and adopted, for example, EPA's process to issue an Inland Testing Manual;
- (4) The EIS/EIR focuses on selecting the best overall long-term distribution of dredged material among the three placement environments, not on details of how the material is determined to be suitable for such placement. A basic assumption of the EIS/EIR is that in all cases sediment must be found to be suitable for the proposed disposal or reuse option in accordance with evaluation requirements in force at the time (see section 5.1.1.1).

The following responses address specific issues raised in the BPC report.

- 20a. Even though they were not as comprehensive as the ITM, both PN 87-1 and PN 93-2 were based on and consistent with the Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230) (which have been in place since 1980), in particular the basic testing requirements of Subpart G. The LTMS agencies have authority to issue detailed guidance consistent with these existing regulations. In particular, the EPA Regional Administrator may require any testing determined to be necessary to provide sufficient information with which to make the Factual Determinations required under these regulations (e.g., 40 CFR Part 230.61).
- 20b. Exhibit 1 was a review by the COE Waterways Experiment Station (WES) of the draft testing guidelines published for public comment as PN 92-7. This review was undertaken at the request of the San Francisco District COE, and the WES comments were taken into consideration by the LTMS agencies, including the San Francisco District COE, and addressed by them as appropriate in jointly

finalizing the testing guidelines as PN 93-2.¹ PN 93-2 was intended to provide interim testing guidance, to be used only until the EPA/USACE national CWA sediment testing manual could be published. The EPA/USACE "Inland Testing Manual" (ITM) has now been finalized, and will replace PN 93-2 as the overall guidance followed for all in-Bay dredged material evaluations. It will be supplemented by more specific local guidance, in a Regional Implementation Manual.

Note that some of the primary reasons that Exhibit 1 considered PN 93-2 to be "inconsistent with national guidelines" were the lack of multi-species sediment testing, the lack of required bioaccumulation testing, and the combining of Tiers 2 and 3 of national guidance into a single tier in PN 93-2. All of these differences tend to equate to less testing under PN 93-2, compared to the now-adopted ITM. The LTMS agencies acknowledged that the PN 93-2 testing would not routinely provide for comprehensive sediment characterization. This necessitated a strict adherence to established endpoints in its few indicators of potential effect (e.g., 20 percent mortality over reference in the amphipod bioassay, the only solid-phase test routinely required, is considered a "failure" under PN 93-2; please also see the response to BPC comment 20g, below). More complete characterization under the ITM framework can provide a more flexible basis for evaluating the results of individual bioassays.

- 20c. The LTMS agencies disagree that regulatory interpretation of test data has "had the effect of eliminating or severely restricting navigation and commerce movement." In fact, as noted in response to BPC comment 20b above, the interim testing guidelines of PN 93-2 helped break the dredging "mudlock" in the Bay area, allowing dredging projects to proceed during a time when operations at some other ports in the country were in fact being severely disrupted by challenges over dredging. In addition, progress has continued in the Bay area since PN 93-2 was issued. Statistics from the interagency Dredged Material Management Office (DMMO), established by the LTMS agencies to help streamline dredging project permit processing, show that over 95 percent of sediment from the Bay area proposed to be dredged is being approved for unconfined aquatic disposal.
- 20d. Past regional guidance on sediment testing, including PN 87-1 and PN 93-2, was consistent with the extant regulations [Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230)]. New regional guidance will implement the ITM, which is fully consistent with these regulations.
- 20e. Now that the ITM has been finalized, its provisions will replace those of PN 93-2. The LTMS agencies will develop more detailed guidance for the San Francisco area via a process that will include opportunity for public input, but the overall framework will be that established in the ITM. Regarding flexibility, applicants have always been able, even under PN 93-2, to avoid the need for aquatic testing by proposing to dispose of dredged material at a non-aquatic site.
- 20f. Consistently applying the tiered testing framework does not mean that all projects will have to conduct the same amount of testing. It is true that under PN 93-2, many projects are required to conduct what under the ITM would be a combination of Tier II and Tier III tests. This is because the majority of dredging projects in the Bay do not meet the testing "exclusion criteria" under the Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230) due to a combination of proximity to pollutant sources and grain size characteristics. In addition, many projects have not generated a sufficient information base from previous testing for existing information to be sufficient for permit decisions. This is especially

¹ A key consideration in deciding to publish PN 93-2 at the time despite some of the issues raised by WES (and other commentors) was that the more comprehensive national guidelines contained in the ITM were not expected to be finalized for approximately a year, and for a variety of reasons the PN 87-1 guidance could not be left in place that long. Reasons included objections by resource and regulatory agencies to permits issued based on the PN 87-1 testing, based on the unaddressed benthic effects pathway and concerns about impacts to the endangered winter-run Chinook salmon. These objections, and initial actions pursuant to Section 404(q) of the CWA, were contributing to project delays and the "mudlock" widely reported at the time. However, at the same time, ports and the dredging industry did not want to see much increased testing before the full testing requirements of the ITM made this unavoidable. PN 93-2 minimally satisfied all sides and allowed dredging to proceed while the ITM was being developed and the overall LTMS programmatic EIS process proceeded. Ultimately, the ITM was not adopted as final for nearly 4 years.

true where previous testing (e.g., under PN 87-1 and/or PN 93-2) has not resulted in a complete characterization of sediment quality, and where some percentage of the sediments have failed even the abbreviated testing requirements of the past. Where more comprehensive information is available, such as for the major civil works deepening projects at the Port of Oakland and the Port of Richmond, and for the JFB Ship Channel Phase III project, Tier I has been sufficient for substantial volumes of the dredged material. It is expected that more comprehensive sediment characterizations under the ITM will ultimately result in more projects meeting their information requirements in Tier I.

- 20g. Applicants are *not* required to compare to past "standardized" results from the Alcatraz Environs under PN 93-2. Rather, they are *allowed* to do so if they so choose, but this is not specifically encouraged by the LTMS agencies. (It is not even an option at the other in-Bay disposal sites, or at the SF-DODS.) The "periodic reference area approach" as it is described in the ITM can substantially reduce sample collection and testing costs for applicants, while at the same time providing them with immediate knowledge about whether their project samples pass this aspect of the testing. It also provides the public with assurance that the degradation of the sediments that had been occurring at the Alcatraz disposal site over time in the past would not continue during the period interim to adoption of the more comprehensive ITM. However, when an applicant chooses to follow this option, comparison of their test results to the reference "standard" would effectively be more strict because a statistical comparison (taking into account the variability in their replicate samples) could not be made. Instead, a direct comparison between their test mean survival value and the Environs reference database value for the same species would be made; if mean test survival was 20 percent or more below the reference database, the sediment would be considered unsuitable for unconfined disposal at the Alcatraz site. This more strict comparison was considered to be an appropriate, and environmentally conservative, compromise to applicants' desire to have low testing costs, within the overall context of the interim testing program. Note that the LTMS agencies will consider eliminating this option in the RIM to be developed in association with the overall LTMS Management Plan.
- 20h. It is true that the Alcatraz Environs reference is predominantly sand, while most Bay area dredged material is predominantly fine-grained. However, under existing requirements of the Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230), an off-site fine-grained reference area may not be used (the Alcatraz Environs is considered to be on-site, but outside the immediate influence of most dredged material deposition in accord with concepts in the ITM). Contrary to the implication of this comment in the BPC report, there is not only one amphipod species that may be used for testing under PN 93-2 (or under the ITM). PN 93-2 specifically discusses three amphipod species that may be used by applicants, subject to compatibility of the sediments to be tested with the physical and biological requirements of the species. For example, *Rhepoxinius abronius* is tolerant of a very wide range of grain sizes, up to at least 90 percent fines. This makes it appropriate for many Bay area projects. Another species, *Ampelisca abdita*, can tolerate even finer sediment and is appropriate for most other Bay area projects. However, both species are sensitive to decreased interstitial salinity. A third species, *Eohaustorius estuarius*, is tolerant of a wide salinity range. Overall, one of these three species will be appropriate for almost any dredging project that may use the Alcatraz disposal site. Nevertheless, the LTMS agencies are interested in further improving the testing situation by identifying an appropriate off-site, finer-grained reference that is more similar to the majority of Bay area dredged material, as soon as it is consistent with the regulations to do so.
- 20i. Please see the response above to BPC comment 20g.
- 20j. It is true that under PN 93-2, the 20 percent mortality difference between reference and test sediment is often used as a strict pass-fail criterion, for the reasons described in response to BPC comment 20g, above. However, it is not true that this is done without consideration of "non-test" factors such as salinity, ammonia, sulfides, or grain size. Such factors are required to be measured in applicants' routine sediment tests under PN 93-2 (as well as under the ITM), and these factors are generally brought into acceptable ranges for the test species prior to the initiation of the test (e.g., interstitial salinity and ammonia adjustments are required to be made following EPA/USACE protocols prior to

introduction of test organisms). Specific consideration is given to the potential effect of any remaining levels of salinity, ammonia, or sulfides when data are reviewed by the LTMS agencies. In several cases, samples have been determined to be suitable for aquatic disposal due to effects from these interfering factors, even though the absolute response in the bioassay was somewhat outside the range normally considered suitable.

- 20k. Limiting Permissible Concentration (LPC) is a concept under the Ocean Dumping regulations, and does not apply under the CWA. However, mixing is taken into consideration in the context of meeting state water quality objectives. Extensive experience both around the country and in the Bay area indicates that disposal at designated open water sites is very rarely denied due to the likelihood of violating numeric or narrative water quality objectives after accounting for initial mixing.
- 20l. It is not true that Tier I is "usually disallowed" when there is a preponderance of existing data. Several projects receive approval without extensive testing based on their history of being uncontaminated and the sufficiency of past test data, and it is expected that more projects will be able to get approval at Tier I in the future as described in response to BPC comment 20f, above. However, it is misleading to describe projects that do not meet Tier I guidelines as having to conduct "the full suite of tests," and that doing this "entire suite of tests" is so onerous that it "constitutes a colossal waste of both public and private funds." As described in response to BDAC comment 5, and BPC comments 20b and 20g above, PN 93-2 is an abbreviated testing program that includes only one elutriate bioassay test and one solid-phase bioassay test. It does not routinely require bioaccumulation testing at all. In contrast, both the ITM and the ocean dumping manual (the "Green Book") require a minimum of seven bioassays in Tier III (three elutriate tests, two solid-phase acute tests, and two bioaccumulation exposures). Prior to final adoption of the ITM in early 1998, the only Bay area dredging projects that had been required to conduct comprehensive Tier III testing are large civil works deepening projects for which ocean disposal at the SF-DODS was being evaluated as an alternative. Although recently some 95 percent of dredged material has ultimately been found to be suitable for aquatic disposal, most of this reflects the non-comprehensive testing conducted under PN 93-2. It is possible that a somewhat smaller percentage would be approved under ITM testing. Nevertheless, such statistics lead the LTMS agencies to believe that more projects will be able to be approved under Tier I in the future once a track record has been established under ITM testing, as described above in response to BPC comment 20f.
- 20m. It is true that "false positive" test results can occasionally occur. This problem is of more concern under an abbreviated testing regime (such as PN 93-2) than under a more comprehensive approach (such as the ITM). However, the fact that chemical results do not always or consistently indicate whether bioassays will show toxicity is not an inherent weakness of either PN 93-2 or the ITM. To the contrary, due to the greater complexities of sediment-chemical interactions and sediment-organism interactions compared to those that take place in the water column, it is a general truism that sediment chemistry does not necessarily indicate sediment toxicity. Far from being ignored or overlooked, this truism is at the heart of the overall testing framework used in the ITM and Green Book (Ocean Disposal Testing Manual). Where numeric regulatory chemical standards exist, they must be met; however, meeting the numeric standards that exist today is usually not enough to reasonably evaluate potential environmental impacts for sediments. Similar levels of a contaminant may be bioavailable and toxic in one sediment, and be unavailable and non-toxic in another. For this reason, the ITM and Green Book testing frameworks require that appropriate standards be met, but rely heavily on sediment-specific, effects-based biological testing as well. Both chemical and biological evaluations are needed *specifically because* chemistry does not consistently indicate toxicity in sediments.
- Because both numeric standards (where they exist) and toxicity standards must be met, neither type of measure "overrides" the other. However, this does not mean that expensive testing is needed in every case. For example, Tier II considers (e.g., with simple computer models using the standard solid-phase chemistry results) whether numeric water quality standards *may* be exceeded under worst-case assumptions. If not, then actual measurement and analysis of elutriate chemistry is not needed. In practice, contrary to the implication of the comment, solid-phase (or "bulk") chemistry is generally

sufficient and elutriate chemistry is very rarely required. Even as sediment quality criteria and standards are developed in the future, this is expected to remain the case.

- 20n. The LTMS agencies disagree that there is no consistent guidance for interpreting test results, and that it is not possible to arrive at a defensible evaluation of environmental effects as required under 40 CFR Part 230.60 and 230.61. Guidance exists for interpreting both chemistry results (numeric and narrative standards) and biological (acute toxicity and bioassay) results. However, this guidance specifically provides for interpretation and application of professional judgment on the part of the agencies. Certainly, more such judgment is required under the abbreviated testing program of PN 93-2 than is the case under the ITM and Green Book.
- 20o. The cost of sediment testing varies from project to project; however, it is generally a small fraction of overall dredging and disposal costs. The testing requirements for the Bay area will not be significantly different than for other areas on the west coast, and so the kinds of costs should be similar. Absolute costs may be somewhat higher here, since on average the Bay area conducts more dredging each year than either the Puget Sound or southern California regions. However, even in those areas (which have already been conducting comprehensive testing, similar to the ITM requirements, for several years), testing costs remain a small fraction of dredging and disposal costs. (Please also see the response above to BPC comment 20c.)
- 20p. The LTMS agencies disagree that this level of economic impact is in fact occurring; however concern over this general issue is an important reason for the LTMS overall. Significant improvements have been made in interagency permit processing, and the majority of sediment is being found suitable for aquatic disposal. Since publication of PN 93-2, dredging projects in general have proceeded without the kinds of delays and disruptions that were beginning under "mudlock." Also, please see the response above to BPC comment 20c.
- 20q. Sediment testing results do not drive the entire decision-making framework of the LTMS. For individual projects, sediment testing defines the range of disposal options for which the specific sediment is suitable. However, the broader framework of the LTMS revolves around the overall goals of reducing in-Bay disposal, and increasing beneficial reuse of dredged material. Please also see the response to BDAC comment 5.
- 20r. Please see the response to BDAC comment 5.
- 20s. The databases listed do not always provide data specific enough to dredging locations to be sufficient information, by themselves, for Tier I approval for particular dredging projects. However, they do provide valuable information that is considered by the LTMS agencies, and that can eventually help streamline dredging project testing needs.
- 20t. Please see the response to BPC comment 20j regarding "non-test" or interfering factors in bioassays. Also, note that all three amphipod species, as well as the species of bivalve and echinoderm larvae, approved under PN 93-2 are defined in the ITM as "benchmark species." Finally, please see the response to BPC comment 20h regarding the need to establish an appropriate fine-grained, off-site reference site for use in future testing. Note that the Alcatraz Environs is composed of stations that are considered to be "on-site" stations (though outside direct influence of most dredged material discharges consistent with concepts discussed in the ITM), and its use does not violate the existing Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230).
- 20u. As described in response to BPC comment 20l above, and contrary to the assertion in the comment, bioaccumulation testing has rarely been required under PN 93-2. (It will be required more often under the ITM, and it is routinely required now for ocean disposal under the Green Book.) The LTMS agencies are working to refine the list of compounds in Bay area sediments that should generally be of concern for bioaccumulation testing. Both this list and the concept of "bioaccumulation trigger levels" (sediment chemical concentrations below which bioaccumulation is not of substantial concern such that

bioaccumulation testing need not be performed) can be discussed at public workshops planned in conjunction with development of the LTMS Management Plan and the sediment testing RIM (also see the response to BDAC comment 5). However, bioaccumulation testing will be required whenever necessary under the Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230) to develop sufficient information for the required Factual Determinations, and not necessarily just at designated "hot spots."

20v. Please see the response above to BPC comment 20h regarding the need to establish an appropriate fine-grained, off-site reference site for use in future testing. Note that the Alcatraz Environs is composed of stations that are considered to be "on-site" stations (though outside direct influence of most dredged material discharges consistent with concepts discussed in the ITM), and its use does not violate the existing Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230). Also, regarding Exhibit 2, note that statistical comparisons are not made when applicants choose to utilize the Alcatraz reference database. (Standard statistical techniques are still applied whenever reference sediment is tested.) Also, please see the response to BPC comment 20g.

20w. Please see the response to BPC comment 20m regarding the role of both chemical and biological evaluations in the overall sediment testing framework. Also, the LTMS agencies are working to refine the list of chemicals of concern for routine evaluation in Bay area projects, and this topic can be discussed at public workshops planned in conjunction with development of the LTMS Management Plan and the sediment testing RIM (also see the response to BDAC comment 5).

20x. Federal projects and non-federal (permitted) projects are evaluated consistently and under the same guidelines in terms of sediment quality testing. If anything, federal projects have conducted *more intensive* testing in recent years than have permitted projects in the Bay area, because only large federal projects have been evaluated using the comprehensive testing requirements of the Green Book (see the response to BPC comment 20l). Similarly, in most cases the "no action" alternative is no more desirable nor less consequential for federal projects than for permit applicants. To the contrary, inability to maintain a federal channel can be economically disastrous for several non-federal entities (all the terminals, wharves, and other businesses and recreational users of the overall area served by the federal channel).

The "NED" and "federal standard" are discussed in the EIS/EIR in section 4.8. Note that the federal standard does not generally address how much testing is needed for a federal versus a non-federal project, but rather relates to cost-sharing related to the traditional disposal option for a federal maintenance dredging project.

20y. The LTMS agencies intend to hold workshops for public input on updated testing guidelines based on the recently-adopted ITM. Specific topics of regional flexibility, such as bioassay species selection, will be discussed at these workshops. The updated testing guidelines will subsequently be incorporated in a Regional Implementation Manual (RIM). The LTMS agencies are also developing a Sampling and Analysis Plan template, including updated QA/QC requirements. The overall framework for sediment quality testing for the Bay is that contained in the ITM, the Clean Water Act 404(b)(1) Guidelines (40 CFR Part 230), and the CWA (just as the framework for testing for ocean disposal will be that contained in the Green Book, the Ocean Dumping regulations, and the MPRSA).



BAY PLANNING COALITION

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August 9, 1996

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Ms. Maria Rea
EPA-Region 9 (W-3)
75 Hawthorne Street
San Francisco, CA 94105

Subject: Long Term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region Draft Policy Environmental Impact Statement Programmatic Environmental Impact Report DEIS/EIR

Dear Ms. Rea:

Enclosed for your review and most serious consideration is our statement and recommendations on the LTMS DEIS/EIR for the San Francisco Bay region.

The \$16 million LTMS for Dredged Material Disposal program is one of the most economically and environmentally significant programs in the Bay region, and in fact, in the U.S. It is of immense importance to the maritime industry, shoreline business and local government members of the Bay Planning Coalition and the greater business community at large throughout northern California.

We support the beneficial reuse of dredged material, but the DEIS-EIR is seriously flawed. Despite the expenditure of \$16 million, we still know very little about the environmental effects and economic impacts of dredged material disposal for beneficial reuse. There is little evidence to support a major policy shift as the document is proposing, based on a predetermined point of view, the effects of which are unknown. LTMS studies in fact have shown no adverse impacts as a result of our current disposal practices. Your strong support is needed to avert a potential disaster if the LTMS is allowed to veer off its course from NEPA/CEQA mandated requirements to establish practicable alternatives and from the LTMS policies and objectives as established in 1991. The DEIS/EIR is not useful as a disposal decisionmaking document until the appropriate economic and environmental evaluations of beneficial reuse, and in comparison with other alternatives, are completed.

We draw your attention, particularly, to our recommendations regarding "Sediment Quality Testing." Sediment quality evaluations drive disposal decisionmaking. We think that it is essential that the LTMS agencies initiate workshops with dredging project applicants and the affected public to reach resolution of the testing issues as BPC describes before the DEIS/EIR can be finalized and utilized in disposal decisionmaking.

Thank you for letting your LTMS Representatives, Chairman, Bob Tufts and Executive Director, Will Travis know of your support of our recommendations.

Sincerely yours,

Ellen Johnck
Executive Director

Enclosure

R-293

Responses to BPC — Bay Planning Coalition, letter dated August 9, 1996

1. Please see the response above to BPC (7/19/96 letter) comment 1 and below to Port of Oakland comment 11.
2. The LTMS agencies plan to hold public workshops regarding updating dredged material testing in the near future. However, we disagree that testing “drives” decision making. Testing details may change over time, but their purpose is to determine which disposal or reuse options may be considered for a particular dredged material.



BENICIA INDUSTRIES INC.

P.O. BOX 315, BENICIA, CALIFORNIA 94510 TELEPHONE 707 745-2394 FAX 707 746-1485

July 26, 1996

Ms. Karen Mason, LTMS Coordinator
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: LTMS - Draft EIS/EIR

Dear Ms. Mason:

We have reviewed the LTMS Draft EIS/EIR and offer the following general comments:

Benicia Industries, Inc. owns and operates a medium size port facility in Benicia, California. Like many port terminal facilities in the S.F. Bay Region, we must perform maintenance dredging operations to provide adequate berthing conditions to our users as well as to optimize our competitive position.

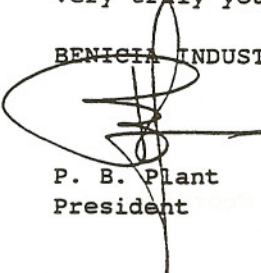
The implication and direction this document suggests seriously concerns us. Even though a preferred alternative has not been suggested it appears the direction leans heavily towards minimal in-Bay disposal. If we are unable to access in-Bay disposal for our maintenance dredging requirements, our business activity in the bay would be significantly jeopardized. Sensitivity to the Bay environs is very important, but we should also be sensitive to economic impacts that regulators impose on those involved in the regions' commerce. This document we feel fails to present complete analysis on either environmental or economic realities for any of the three suggested alternatives. Until we are able to provide enough information on the environmental and economic feasibility to satisfy all involved in the LTMS project, a preferred alternative recommendation is premature. In depth evaluations should be done in a number of areas in connection with the LTMS. A few are listed below.

- Real disposal cost impacts under the three alternatives.
- Are there funding or cost sharing opportunities available.
- Overall economic realities of the suggested alternatives.
- Additional in-Bay disposal alternatives.
- Sediment testing contaminant issues, especially how testing relates to the acceptability of disposal.

It is evident that more work must be done before the LTMS Draft EIS/EIR and preferred alternative selection are finalized. We would urge you to address our concerns.

Very truly yours,

BENICIA INDUSTRIES, INC.



P. B. Plant
President

PBP/njp

Responses to BI — Benicia Industries, letter dated July 26, 1996

1. Statement noted. Please see the responses to Foster City comment 5 and BDAC comment 2.
2. Statement noted. Please see the responses to DOC comment 2, BPC comment 1 (7/19/96 letter), and Port of Oakland comment 11.
3. Please see the responses to BPC comments 7a and 9, and Redwood comment 5(f)4.

Please see the responses to BPC comments 11 and 12 and Redwood comment 5f(4), as well as the revised section 4.8.

Overall economic effects are evaluated in this EIS/EIR at a comparative, programmatic level; however, the potential costs represent a reasonable worst-case scenario. Please also see the response to Port of Oakland comment 33c.

Please see the response to Benicia comment 4 and Oakland comment 8.

Sediment testing and its role in disposal decisionmaking is discussed extensively in Chapter 3. Also, please see the response to Foster City comment 5.

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July 19, 1996

LTMS EIS/EIR Coordinator
c/o U.S. Environmental Protection Agency
Region 9 (W-3-3)
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Sir/Madam:

The California Association of Harbor Masters and Port Captains is pleased to be presented with the opportunity to review the Draft EIS/EIR for the LTMS. We have numerous members that operate small craft facilities on San Francisco Bay, these members will be sending their own comments to you.

We want to thank the LTMS agencies for the efforts they have expended over the past ten years to get to this point. During this time frame: dredging has been reduced from 8mcy to 6mcy per year; material has gone to several landfills for daily cover; there is an Alcatraz disposal management plan; material testing protocols have changed and as a result the material going to in-bay disposal is cleaner than it was; all of the Port of Oakland -42' project material is going outside of the Bay; a variety of U.S. Navy new work projects such as the USS Missouri homeporting project have been canceled; a Dredged Material Management Office is being created.

We are concerned about some of the comments made concerning small dredgers and minor dredgers. Comments as "... the LTMS agencies will continue to work to reduce the need for dredging associated with other projects, such as recreational marinas." We believe recreational marinas provide a quality of life to the citizens of the region due to public access, access to the water for all from kayakers to fisherman.

We are also concerned about having the COE confirm or revise the Dredged Material Management plans for existing federal maintenance dredging projects. Several of these projects, Petaluma, Napa, and Suisun Rivers all provide access to small craft marinas and launch ramps. What impact will this review have on Congressionally authorized projects. As well as the small boater.

We are very pleased to have comments that reflect the equipment and cost constraints of dredging small craft facilities and the possible recognition that a permanent in-bay disposal site needs to be retained for the minor dredgers. We would like to see this policy incorporated in a final document.


R-301

July 19, 1996

- 4 We do wish to discuss the ever increasing cost of testing. It is recognized in the Appendix that the cost of testing for a "small" minor dredger is \$8.00 per cubic yard. This cost is equal to the cost of dredging. A more equitable manner of testing protocol needs to be reached, that provides environmental protection while being practicable to the small craft facility.
- 5 We are concerned about the continuing statement of the "need" to develop beneficial reuse facilities. We understand that there is sufficient in-bay disposal capacity to meet the maintenance needs of SUAD material. And that the Ocean Disposal Site could meet the new work needs of SUAD material. It appears to us that work need to be done on developing rehandling facilities to handle the NUAD material. We suggest that the LTMS agencies start to expend their limited resources in this direction of developing several multi-user sites around the estuary for NUAD material.
- 6 Concerning the development of wetland restoration sites, we believe that the North Bay Initiative needs to be completed to fully understand the needs of the North Bay. Also, we believe that the U. S. Fish and Wildlife Service needs to be come a major participant in the planning process to make certain that all of their needs are being met in any projected wetland restoration project.
- 7 For the above reasons, ranging from the situation is improving due to better management and the full number of unknowns concerning beneficial reuse including it's practicability, we recommend that the DEIS/EIR either not be finalized until the myriad of issues surrounding beneficial reuse be fully and properly addressed or that the no action alternative be adopted.

We look forward to continuing our work with all of the interested parties through the LTMS process and wish to thank the members of the Management Committee for the heroic level of effort to date.

Respectfully submitted,



James M. Haussener
Chair, Legislative Committee

Responses to CAHMPC — California Association of Harbor Masters and Port Captains, letter dated July 19, 1996

1. The Final EIS/EIR includes a policy-level small dredger mitigation measure (see section 5.1.1.5). The LTMS agencies agree about the importance of recreational marinas. The statements in the EIS/EIR referenced by the commentor refer to efforts to ensure that dredging is reduced to the minimum needed to support recreational marinas, not that recreational marinas are not needed. It was not the intent of the LTMS agencies to single out recreational marinas. Text changes have been made in section 5.1.1.3 so that these marinas are no longer singularly identified.

See also the response to CDBW comments 1 and 2.
2. The COE must revise the Dredged Material Management Plans (DMMP) regardless of whether LTMS goes forward (per national dredging policy and COE guidance).
3. We agree with the comment. A “small dredger” policy that sets aside some of the capacity at the in-Bay disposal sites has been incorporated in the Final EIS/EIR. Please see the response to CDBW comment 1.
4. The LTMS agencies plan to develop a policy-level mitigation measure for small dredgers. It is expected that a good portion of in-Bay disposal capacity will be reserved for small dredgers. In addition, the level of testing specified in PN 93-2 for in-Bay disposal is lower than that required for ocean disposal, and also generally requires less testing (fewer samples) for small dredging projects.
5. Please see the responses to CMANC comment 4 and CMPHA comment 5.
6. The LTMS agencies do not believe that the North Bay Initiative process must necessarily be completed before any upland disposal or beneficial use can be considered. However, they agree that the USFWS’ continued participation. The USFWS’ continued participation throughout the planning process, as well as all other appropriate agencies and interested parties, will be crucial to the success of these projects. Each wetland restoration project will require a separate design plan and environmental review period. Also see the response to BPC comment 18.
7. Please see the response to Department of Commerce comment 1. Additional NEPA/CEQA documentation and evaluation for beneficial reuse sites would be completed on a site-specific basis and not in the Programmatic/Policy EIS/EIR. The no-action alternative is not feasible due to the problems with disposal at Alcatraz (i.e., mounding; see the response to Krone comment 9a below), and with the new disposal alternative of SF-DODS. Please see the response to Benicia comment 5.



Organized 1956

CALIFORNIA MARINE AFFAIRS AND NAVIGATION CONFERENCE

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July 19, 1996

LTMS EIS/EIR Coordinator
c/o U.S. Environmental Protection Agency
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75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Sir/Madam:

The California Marine Affairs and Navigation Conference is pleased to be presented with the opportunity to review the Draft EIS/EIR for the LTMS. Many of our members in the San Francisco Bay Area will be sending in their own comments to you.

We want to thank the LTMS agencies for the efforts they have expended over the past ten years to get to this point. During this time frame: dredging has been reduced from 8mcy to 6mcy per year; material has gone to several landfills for daily cover; there is an Alcatraz disposal management plan; material testing protocols have changed and as a result the material going to in-bay disposal is cleaner than it was; all of the Port of Oakland -42' project material is going outside of the Bay; a variety of U.S. Navy new work projects such as the USS Missouri homeporting project have been canceled; A Dredged Material Management Office is being created.

The DEIS/EIR correctly states that there is currently sufficient in bay disposal capacity to accommodate the current maintenance dredging needs of those with material suitable for unconfined aquatic disposal (SUAD). Also, we now have the availability for SUAD material to go to the ocean dredged material disposal site.

The DEIS/EIR states "Increasing beneficial reuse of dredged material will help diversify disposal options and promote better environmental protection and enhancement." We certainly agree that reuse will diversify disposal options. We are not certain if there will be better environmental protection nor are we certain of the practicability of this option. 1

We would like to have the LTMS agencies work on further developing the beneficial reuse options. Under alternative 1, it is expected that 2 - 17mcy wetland restoration projects will have to occur. Further work needs to be done to guarantee these facilities are developed, ranging from land acquisition, permits, mitigation (if necessary), construction, who can use, operation, monitoring, and costs. 2

Additionally, there are ongoing items concerning wetland creation that need to be taken into account. First, we believe that the North Bay Initiative needs to be completed to fully understand the needs of the North Bay. Also, we believe 3

- 3 that the U. S. Fish and Wildlife Service needs to become a major participant in the planning process to make certain that all of their needs (and the species they represent) are being met in any projected wetland restoration project.
- 4 The DEIS/EIR commented about the not suitable for aquatic disposal (NUAD) material and the approximately 1mcy per year that is being generated. This is a pressing item for the region. The development of transfer facilities is needed to get this material into landfill sites. We believe that the LTMS agencies must work on developing these sites at this time. We do not know the size of the sites that must be created, but would imagine due to drying time of 1 to 2 years the sites, in aggregate, must accommodate 2 to 3mcy of material. These sites must be located, acquired, developed, mitigated, monitored, and operated. The LTMS agencies need to take the lead role in making these sites useable. Which may mean that the LTMS agencies need to get legislative approval to do these projects.
- 5 It is stated in the DEIS/EIR that only the adoption of an action alternative would include the establishment of a Dredged Material Management Office. It is our understanding that the DMMO is being developed at this time and some permit applications have been circulated using the draft DMMO concept.
- 6 For the above reasons, ranging from the situation is improving due to better management and the full number of unknowns concerning beneficial reuse including its practicability, we recommend that the DEIS/EIR either not be finalized until the myriad of issues surrounding beneficial reuse be fully and properly addressed or that the no action alternative be adopted.

We look forward to continuing our work with all of the interested parties through the LTMS process and wish to thank the members of the Management Committee for the heroic level of effort to date.

Respectfully submitted,


James M. Haussener
Chair, Environmental Committee

Responses to CMANC — California Marine Affairs and Navigation Conference, letter dated July 19, 1996

1. Statement noted. Please see the response to BPC comment 1 (7/19/96 letter).
2. Statement noted. The LTMS agencies are presently developing a Management Plan for the implementation of the LTMS. The issues raised in this comment will be addressed through this public process.
3. Please see the response to CAHMPA comment 6.
4. Statement noted. Rehandling facilities provide a key link between dredging projects and the ultimate use of material in upland projects. Analysis examining the feasibility and location of dredged material rehandling facilities is currently being conducted through funds provided by the California Coastal Conservancy. Development of rehandling facilities is more fully addressed in the Final EIS/EIR and in the LTMS Management Plan for the implementation of the LTMS.
5. The DMMO was formally initiated as a pilot-phase effort on July 9, 1996 (3 months after publication of the Draft EIS/EIR), by MOA among the LTMS agencies, as well as the California State Lands Commission. This Pilot DMMO was also announced by Public Notice 96-3, dated October 1, 1996. The LTMS agencies did not — and still do not — expect to establish the DMMO as a “permanent” effort prior to finalization of the EIS/EIR. However, if for any reason an action alternative is not implemented, every effort would be made to continue as much of the improved coordination now occurring via the DMMO as possible.
6. Please see the responses to DOC comment 2, Benicia comment 5, CAHMPC comment 7, and Krone comment 9a.



July 17, 1996

LTMS EIR/EIR Comments
C/O U.S. Environmental Protection Agency
Region 9 (W-3-3)
75 Hawthorne Street
San Francisco, CA 94105-3901

I am writing on behalf of the California Marine Parks & Harbors Assn. Inc. (CMPHA) to provide comments on the Draft EIS/EIR for the Long Term management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay region.

The mission of CMPHA, a statewide association, is to foster the development and improvement of small craft facilities, harbors of refuge, aquatic parks; and to seek the enhancement and betterment of recreational boating, and the marine environment.

We join with other organizations such as the Bay Planning Coalition, Northern California Marine Association and California Marine Affairs and Navigation Conference (CMANC) in supporting the LTMS process to develop and implement a strategy that will result in the predictable and economical management of dredging and the placement of dredged materials without significant adverse environmental impacts.

In general, the document represents a comprehensive review of the dredging process, including history, current procedures, and potential future direction. It provides an excellent summary of the many work products resulting from the LTMS process.

Required dredging to support navigation to and within small harbors and marinas can be considered insignificant compared to large new work and maintenance projects in support of Federal channels and major ports. Smaller dredging activities cannot take advantage of the economy of scale enjoyed by larger projects. Therefore, an economical option, such as continued in-bay disposal, is required for municipalities, water dependent properties, small harbors and recreational marinas. Although Section 1.6.2 of the Executive Summary discusses special consideration for "minor dredger" projects, it fails to define a minor dredger. Smaller projects should be defined on the basis of amounts of material dredged rather than depths attained.

Paragraph 3.1 of the document implies that dredging may only be required to support slips in marinas. This section should be expanded to reflect the need to dredge areas supporting recreational lagoons, launch ramps and navigation channels that provide access between small harbors and marinas and open waters.

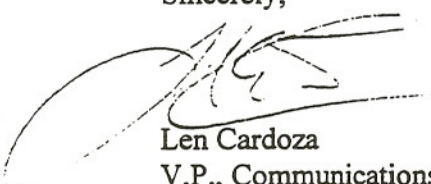
- 3 | Page 1-8 of the document's executive summary states that "The LTMS Agencies will continue to work to reduce the need for dredging associated with other projects, such as recreational marinas." This may imply that dredging recreational marinas is an elective or discretionary activity. This is completely inaccurate. Indeed, recreational marinas continue to express interest in reducing *unnecessary* dredging and actively work with agencies to minimally dredge, in terms of material and timing, as necessary to support navigation requirements. Detailed pre and post dredge surveys, combined with vessel traffic analysis within channels and fairways, support this effort.
- 4 | Section 1.6.2 of the executive summary does not include the impacts of the Pacific herring fishery on dredging and aquatic disposal of dredged materials. California Department of Fish and game has imposed restrictions on dredging operations during herring activity in San Francisco Bay in the winter months. Dredging should not be singled out when other activities (cargo transfer, vessel transits, effluent discharge continue, apparently without adverse impact to herring spawning activities.

- The Draft LTMS document correctly states that the majority of dredged material is suitable for unconfined disposal. The relatively small amount of material not suitable for unconfined disposal (NUAD -class) continues to represent a significant challenge, particularly for small dredging operations. Confined disposal options for most discreet dredging activities are currently not economically feasible. Assuming a potential facility is available for reuse/disposal, significant obstacles include eliminating / delaying property from attaining its highest and best use option; public concerns about odor and health; transportation; ultimate end use; and potentially
- 5 | expensive requirements for future management / monitoring. Although the document describes various categories of disposal options for NUAD material, it does not address the next step: describing a strategy to achieve these in an economical manner.
- 6 | Demonstration projects for beneficial reuse, described throughout the document, have been relatively expensive compared to aquatic disposal. These projects, including Jersey Island and Sonoma Baylands, continue to incur unpredictable costs in terms of maintenance and monitoring. They do not provide practicable alternatives for smaller, discrete, dredging projects.
- 7 | Sediment quality testing is another problematic dredging element. Although the Dredged Material Management Office (DMMO), as described in section 3.2.5.4, is a vast improvement in obtaining early comments on a proposed Sampling and Analysis Plan (SAP), the process itself is still unpredictable and subjective. The consolidated Regional Implementation Manual (RIM), including more systematic use of the tiered approach to dredging, particularly for Tier I exclusions, for projects showing a history of maintenance dredging of clean material would be a vast improvement over the current situation. Sampling / Testing often exceeds \$1.00 per cubic yard in relatively small projects. This can be a major expense to municipalities, ports, harbors, and

marinas without providing a benefit in terms of a significant improvement in water quality. ↑ 7

Thank you for the opportunity to provide comments to the Draft EIS/EIR for LTMS.
Please feel free to contact me if you have questions.

Sincerely,



Len Cardoza
V.P., Communications

Responses to CMPHA — California Marine Parks and Harbors Association, Inc., letter dated July 17, 1996

1. The definition of small dredger has been changed to include depth attained and average volume of material dredged over time (see section 4.6.2.1). Please see the response to Foster City comment 1.
2. The intent of the referenced paragraph is simply to provide a brief overview of the tremendous amount of boating activity the Bay supports.
3. We agree. The LTMS agencies appreciate the ongoing efforts of the CMPHA and its members to minimize dredging volumes, and did not intend to single out recreational marinas in terms of reducing unnecessary dredging. Please see the response to CDBW comments 1 and 2.
4. The LTMS addresses dredged material management and is not making decisions regarding vessel transits, cargo transfers, and effluent discharge from ships. Therefore the potential impacts of these activities on the Pacific herring fishery are not directly considered. However, the Final EIS/EIR does discuss restrictions that are necessary for the protection of Pacific herring and other species potentially affected by dredging or disposal in the Bay area; see revised Chapter 5 and, in particular, new Tables 5.1-1 and 5.1-2.
5. The feasibility of implementing the NUAD disposal techniques described in this document will depend on innovative financing options that promote beneficial reuse. Chapter 7.0 outlines some of the possible financing options for promoting beneficial reuse. Implementation of these financing options and approaches to NUAD disposal will be addressed in the LTMS Management Plan for the preferred management alternative.
6. Please see section 4.6.2.1 of the EIS/EIR for a definition of small dredgers and section 6.5.7 for a discussion regarding the LTMS small dredger policy. Section 7.3 discusses the LTMS agencies' hope to develop multi-user sites for beneficial reuse projects. Funding options for disposal sites, such as multi-user sites that would accept small amounts of dredged material, are also discussed in that section of the document.
7. This is already being done when data warrant it. It is expected that use of Tier I will increase over time as the database expands. Please see the response to DOC comment 5. Testing performed for maintenance projects will build a track record showing consistently clean material for those areas thereby decreasing our need for testing.



July 19, 1996

Ms. Karen Mason
LTMS EIS/EIR Coordinator
c/o Environmental Protection Agency
Region 9 (W-3-3)
75 Hawthorne Street
San Francisco, CA 94105

Subject: Comments on the Long Term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region Draft Policy Environmental Impact Statement Programmatic Environmental Impact Report (DEIS/EIR)

To the LTMS Agencies:

The five port members of the Golden Gate Ports Association have actively supported the LTMS program since 1991 and are eager to see its successful implementation.

We have reviewed the subject document and find it seriously insufficient upon which to base disposal site decisions. It is not in compliance with NEPA and CEQA which requires that the alternatives evaluated must be based on a standard of practicability. We are very much in favor of the concept of the beneficial reuse of dredged material. However, this approach must be environmentally sound, cost-effective and practicable. 1

We have already begun to experience increased dredging costs in the past few years for maintenance dredging under our normal in-Bay disposal practices due to many factors, including costs for sediment testing and the reduction of dredging contractors operating in the Bay to 1-2 companies. The DEIS/EIR has overlooked an essential factor, i.e. the majority of material disposed at the in-Bay sites is maintenance material; not large volume, new work projects. We do not anticipate any new work projects in the future, except for the Port of Oakland's 50' deepening project and some parts of the S.F. to Stockton ship channel, and these projects will likely be able to utilize reuse opportunities. So, for purposes of the DEIS/EIR, it is important to direct LTMS agency attention to the economic impact of moving maintenance material to upland reuse. A predictable and timely completion of the maintenance dredging cycle for all maritime operations is crucial to the stability of the maritime-based economy. Our grave concern is that the implementation of a 2

- 2 disposal approach which would limit in-Bay disposal of maintenance dredging to even smaller volumes than presently allowed under the Corps of Engineers in-Bay Site Management Plan (PN 93-3) will have severe economic consequences to Bay users and drive shipping and trade away from the Bay Area.
- 3 The major shortcomings of the DEIS/EIR are the failure to understand and apparent lack of knowledge about the economics of dredging and infrastructure cost associated with upland reuse and also the importance, both legally and scientifically, of the environmental assessment in disposal decisionmaking.
- 4 Based on the above-described shortcomings, we cannot recommend a specific option, nor do we think the agencies should select a policy alternative until the LTMS develops and evaluates practicable, cost-effective, and environmentally sound, "real" alternatives. At the present time, there are no upland reuse alternatives available. Certain tasks, such as a more detailed analysis of the environmental and economic impacts of upland disposal and comparisons with aquatic disposal, must be completed.
- 5 As part of the environmental analysis, the subject of sediment quality testing and its role in determining environmental effects of disposal must be considered. Sediment quality evaluations drive disposal decisionmaking. At present, there is no consistent and justifiable decisionmaking framework for interpreting the dredged material test data which makes the link from the test results to a determination of demonstrated environmental effects. We recommend that workshops be convened by the LTMS agencies to do the following:
1. Revisit the premises of the existing sediment testing guidelines, Public Notice 93-2. We refer you to the Bay Planning Coalition's paper entitled "**Sediment Quality Testing: Issues Related to the Testing Guidelines for Dredged Material Disposal at S.F. Bay Sites.**" This paper describes serious flaws with PN 93-2. The workshop agenda should include a discussion of such topics as the approach to the design of testing requirements, interpretative criteria for bioassays, species selection and point of reference for sediment comparison purposes, and allowable mixing. These discussions should result in a new Regional Testing Guidance Manual.
 2. Develop a Regional Decisionmaking Framework for evaluating the environmental acceptability of the full continuum of dredged material (both clean and contaminated) management alternatives. Both the Decisionmaking Framework and the replacement of PN 93-2 should be incorporated into a new Regional Testing Guidance Manual and adopted into the LTMS Management Plan.
- 6 Rather than revising and recirculating the DEIS/EIR, we recommend that the