

**Final Environmental Assessment of the Issuance of an
Incidental Harassment Authorization for the Take of Marine Mammals
During Dredging Operations at Pier 39, San Francisco, California**

I. INTRODUCTION

On June 21, 2004, the National Marine Fisheries Service (NMFS) received an application from Bay Marina Management Incorporated (BMMI) requesting an Incidental Harassment Authorization (IHA) under section 101 (a)(5)(D) of the Marine Mammal Protection Act (MMPA). The one-year IHA would authorize the take, by harassment, of small numbers of California sea lions (*Zalophus californianus*) and Pacific harbor seals (*Phoca vitulina richardsi*), incidental to the maintenance dredging of I, J, and K docks at Pier 39 in San Francisco, California. This Environmental Assessment is intended to address impacts to the environment that would result from the issuance of the IHA.

II. PURPOSE AND NEED

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1361 et seq.) directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and regulations are issued.

Authorization may be granted if the Secretary finds that the taking will have a negligible impact on the species or stock(s); will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses; and the permissible methods of taking and requirements pertaining to the monitoring and reporting of such taking are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

On April 30, 1994, the President signed Pub. Law 103-238, the Marine Mammal Protection Act Amendments of 1994. One part of this law added a new subsection 101(a)(5)(D) to the MMPA to establish an expedited process by which citizens of the United States can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Except with respect to certain activities not relevant here, the MMPA, as amended, now defines "harassment" as

"...any act of pursuit, torment, or annoyance which (a) has the potential to injure a marine mammal or marine mammal stock in the wild; or (b) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering."

Subsection 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of small numbers of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny issuance of the authorization.

BMMI determined that the dredging activities might potentially disturb marine mammals and submitted an application for an IHA. If the action proposed in the IHA application will have a negligible impact on the species or stock, will not have an unmitigable adverse impact on the availability of the species or stock for subsistence uses, and the permissible methods of taking and required monitoring are set forth, then NMFS must issue the IHA. The purpose of the IHA is to discuss the status of the marine mammals that may be impacted by the action, set forth the types and amount of take that may occur, and list the mitigation and monitoring required to ensure the least practicable impact to marine mammal species.

III. DESCRIPTION OF ACTIVITY COVERED BY PROPOSED AUTHORIZATION

BMMI proposes to perform maintenance dredging using a small, self-contained clamshell-style crane barge between docks I, J, and K at the Pier 39 west marina (Figure 1). These maintenance measures are necessary to maintain safe navigation depths at the marina, which currently has reduced water depths attributed to the accretion of bay sediment. The proposed dredging at Pier 39 will remove sediment to create water depths in the project area of -9 feet Mean Lower Low Water (MLLW), plus an additional two-foot overdredge allowance. Dredging design area limits (footprints) include the faces, approaches, and entrance channels to each **berthing area up to the limit of the adjacent pier**. **Dredging** will occur between June 1 and November 30 to minimize impacts to steelhead trout and Chinook salmon.

Dredging operations at the Pier 39 west marina are expected to occur in late fall of 2005 or the summer of 2006 and are estimated to take approximately one to two weeks to complete. Dredge machinery would operate from 8:00 AM to 3:30 PM daily. Approximately 13,000 cubic yards of material would be removed. Material to be dredged will be tested for pollutants and toxins by the Dredge Material Management Office prior to approval to begin dredging, and deposition of dredged materials will be deposited in accordance with local, state and federal regulations. Once removed, the dredged material will be transferred to Piers 96/98, which are owned and operated by the Port of San Francisco, and from there it will be disposed of at an approved upland disposal site.

The proposed dredging of the Pier 39 west berthing area will focus on the channels and slips of I and J docks and half of the channel between J and K docks (Figure 2). The original K dock was destroyed by the combined weight of hundreds of California sea lions that frequently use the area as a haul-out. Pier 39 replaced the damaged dock with a number of ten by twelve-foot floats for the sea lions to use. Since there are no actual berthing sites at K dock, no dredging will be necessary in the area immediately surrounding or under K dock. The crane barge will be situated at the furthest distance possible from K dock during each dredging episode. The closest

that the barge will be to the K dock haul-out is when dredging the channel between J and K docks. When the barge is dredging this channel it will be moored to the bayside of J dock and extend the clamshell dredge arm out into the channel, towards K dock. Since the distance between J and K docks is 100 feet and the barge is 30 feet wide, it will never be positioned closer than 50 feet to K dock at any time during the dredging project.

IV. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. Preferred Alternative (Issuance of IHA)

The proposed action is for NMFS to issue a one-year Incidental Harassment Authorization to BMMI allowing the incidental take, by harassment, of small numbers of California sea lions and Pacific harbor seals during 2005-2006 dredging operations at Pier 39. A description of the activity to be covered by the proposed IHA was provided above. The potential impacts to marine mammals from a one-year IHA will be as described in section (VI)(A)(1) of this document. The mitigation measures and reporting requirements described in **section (VII) will be incorporated into the IHA. NMFS has preliminarily determined that the issuance of this IHA** would result in the taking, by harassment, of only small numbers of marine mammals and will have no more than a negligible impact on affected stocks.

B. No Action Alternative

The No Action Alternative is not issuing the IHA. The MMPA prohibits all takings of marine mammals unless authorized by a permit or exempted under the MMPA. If an authorization to incidentally take California sea lions and Pacific harbor seals were denied, the applicant could choose to amend the project to avoid harassing marine mammals or choose not to pursue the project.

C. Issuance of IHA with Time-of-year Restrictions

Another alternative is to issue an IHA with additional restrictions on the time of year that the activities may be conducted. BMMI's project description already limits dredge operation to a June 1 - November 30 work window to minimize impacts to steelhead trout, Chinook salmon and Pacific herring. NMFS could further limit the work window to a time when lower numbers of California sea lions have been documented at the dock to reduce take. Approximately half as many California sea lions have been observed at any one time in the months of June, July, and November, as have been observed in the months of August, September, and October (Table 1). While this alternative would also result in no more than a negligible impact on pinnipeds, adoption of this alternative could result in sizable adverse economic impacts due to possible extension of the work period over an additional year or two.

V. AFFECTED ENVIRONMENT

A. Project Area

Pier 39 is one of many commercial, industrial and recreational piers that comprise the Port of San Francisco, located in San Francisco Bay, California. The Port of San Francisco occupies the bay front along the northeastern portion of the San Francisco peninsula, in the City and County of San Francisco. San Francisco Bay lies to the north of the pier and the intersection of The Embarcadero and Beach Street is located to the south (Figure 1).

Pier 39 is a major tourist attraction in San Francisco and houses many shops, restaurants, attractions and a marina with berthing slips for boats. As one of San Francisco's top tourist destinations, Pier 39 receives very high numbers of human visitors throughout the year. The Pier 39 maritime facilities can be divided into two areas, the west and east harbors, which are situated on either side of the pier, respectively. Maintenance dredging of the east side of Pier 39 was completed in 2000, so this report focuses on the west marina dredging project. The west side of the marina consists of three docks: I, J and K. I and J docks have active boat slips (about 35 total) that receive heavy usage due to Pier 39's popularity as a sailing destination. Sediment has accumulated in this area at the approximate rate of one foot per year for the past 18 years; this has reduced the low-tide water depth to three feet MLLW, seriously hampering boating activities. K dock has been replaced by a number of floating platforms that are used by marine mammals as haul-outs, which are major tourist attractions themselves (Figure 3).

The area of Pier 39 known as K Dock is a major haul out location used by marine mammals in the San Francisco Bay. Although originally a dock with berthing slips, excessive use by California sea lions for haulout rendered the dock structure water-logged, damaged and a hazard to boaters. Pier 39 removed the dock in the summer of 1995 and replaced it with about 35 ten by twelve foot (10' x 12') floating platforms for exclusive use of marine mammals as a haul out. Since the platforms float they move up and down with the tide which makes them accessible to pinnipeds at all tidal levels, whereas typical haul-out sites such as rocks and exposed shores can become inaccessible at high tide. The increased numbers of marine mammals in the marina, in addition to the increased interest in them by the public, spurred the Marine Mammal Center (MMC) to set up a kiosk and docent program at Pier 39 to monitor the marine mammals and to provide information and resources to the general public.

B. Marine Mammals

California sea lions are the most common marine mammals observed at K dock, but Pacific harbor seals and Steller sea lions (which are addressed in part C of this section) have also been observed.

1. California Sea Lions

The population of California sea lions ranges from southern Mexico to southwestern Canada (**Caretta et al., 2004**). In the U.S., they breed during July after pupping in late May to June, primarily in the Channel Islands of California. Most individuals of this species breed on

the Channel Islands off southern California and off Baja and mainland Mexico, although a few pups have been born on Año Nuevo Island and a pup was born on the docks in Monterey this year and subsequently transferred to Año Nuevo with its mother. Following the breeding season on the Channel Islands, most adult and sub-adult males migrate northward to central and northern California and to the Pacific Northwest, while most females and young animals either remain on or near the breeding grounds throughout the year or move southward or northward, as far as Monterey Bay. Since monitoring began in 1991, only ten California sea lion pups have been observed at Pier 39, in 1997 and 1998. These pups, which were all weaned, most likely hauled out at K Dock due to the El Nino, and pups are not expected at the project site in “normal” years.

Since nearing extinction in the early 1900s, the California sea lion population has increased and is now robust and growing at a current rate of 5.4 to 6.1 percent per year (based on pup counts) with an estimated “minimum” population (U.S. West Coast) of 138,881 animals. Actual population level may be as high as 237,000 to 244,000 animals. The population is not listed as “endangered” or “threatened” under the Endangered Species Act (ESA); nor is this species listed as “depleted” or as a “strategic stock” under the MMPA.

California sea lions first appeared at Pier 39 in September, 1989. Numbers of hauled-out sea lions were relatively low the first year, and they only used the haul-out from late summer through the winter. Within a few years, substantial numbers of sea lions were observed at K docks and they began using the haul-out throughout the year. The Marine Mammal Center (MMC) established a docent program to monitor the sea lions and educate the numerous tourists in the vicinity simultaneously. Counts from the MMC in the late 1990s indicated peak usage of K dock at Pier 39 in May and Early June, just prior to the breeding season. Although numbers decrease during mid-summer, since most adults relocate to the rookeries for pupping and breeding, some sea lions of all age classes remain in the area and continue to haul out at Pier 39. Recent population counts reveal that the largest numbers of California sea lions using Pier 39 are now in late summer and fall. The highest observed number of individuals at Pier 39 to date is 1,341 sea lions (May 31, 2003), but average numbers per month (calculated over the last five years, since numbers have steadily increased since counts began) are lower (Table 1) and numbers were unusually low in 2004.

	2004	2003	2002	2001	2000	Average
June	336	587	115	436	20	299
July	43	441	58	182	119	169
August	334	1038	443	1018	608	688
September	355	822	695	979	695	709
October	323	938	688	832	615	679
November	214	454	261	289	524	348

Table 1. Average number of California sea lions present during counts made in indicated months since 2000. Number of counts conducted per month varied from 1 to 25 and counts were not made at specific times.

2. Pacific Harbor Seals

Although not commonly observed at Pier 39, Pacific harbor seals have been documented as visitors to K dock numerous times in the past decade. Harbor seals live in the Pacific Ocean from Baja California in Mexico northward to the Aleutian Islands of Alaska. The population estimate for the California stock is 27,863 individuals (Caretta, et al., 2004) and is relatively stable. The population is not listed as “endangered” or “threatened” under the Endangered Species Act (ESA); nor is this species listed as “depleted” or as a “strategic stock” under the MMPA.

Harbor seals inhabit coastal waters within their range and prefer sheltered bays and inlets to the exposed coastline. Daily haul-out behavior of harbor seals is typically dependent on the tides, weather and time of day. Harbor seals exhibit seasonal variation in reproductive timing depending on geography. The pupping season for California populations is in the spring, with populations in the San Francisco Bay typically bearing young from March 15 through May 31 (Green et al., 2001). There are two active pupping sites in the San Francisco Bay: Mowry Slough in the South Bay and Castro Rocks in the North Bay. Pups have been observed at two other locations in the Bay: Yerba Buena Island and Corte Madera Marsh. No births have been witnessed at either of these locations, though it is suspected that Yerba Buena is used for pupping. Pupping season is a particularly sensitive time for harbor seals since the pups must get enough nutrition from nursing their mothers to survive their first months of life until they learn to hunt for themselves. When a pup and mother are separated during the pup’s first month of life and fail to reunite, the pup frequently dies since it can not care for itself.

Annual counts of harbor seals at Pier 39 range from 0 seals observed in 1999 and 2004, to a high of 9 observations in 2000 for a total of 28 observations between 1997-2004 (Table 1). No more than two harbor seals have been observed hauled out simultaneously at any given time at K docks. No harbor seals have been observed hauling out at Pier 39 July through September. No pups have been observed at Pier 39. Observations by MMC volunteers indicate that observed

harbor seals at Pier 39 tend to distance themselves from the California sea lions hauling out in the vicinity.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1997						1					3		4
1998				1									1
1999													0
2000		2		1	2	1				1		2	9
2001				3									3
2002	1			3	2								6
2003	1		2	1								1	5
2004													0

Table 2. Total number of Pacific harbor seals seen each year since 1997. bl

C. Endangered Species

1. Steller Sea Lion

A rare pinniped visitor to Pier 39, listed as Endangered under the ESA, is the Steller sea lion (*Eumetopias jubatus*). This sea lion is substantially larger than the California sea lion which makes the two species relatively easy to distinguish. Steller sea lions inhabit the northern Pacific Ocean from the Channel Islands in Southern California northward to Alaska and westward to Japan. The California individuals are part of a larger breeding stock known as the “Eastern” Steller sea lions, which includes populations in California, Oregon, Washington and Southeast Alaska. Globally, numbers of Steller sea lions have dropped an estimated 65% over the past 40 years (Seal Conservation Society, 2001). The “Western” population continues to decline, but the “Eastern” population has remained comparatively stable and the current minimum estimate is 31,028 individuals. Aerial surveys combined with ground counts of Steller sea lions in the summer of 1996 in California tallied 2,042 individuals (Caretta et al., 2004). Actual population numbers are likely higher since some sea lions may have been foraging away from haul out sites during the counts.

During the May-to-July breeding season, the Eastern stock of Steller sea lions congregate at more than 40 rookeries (4 or 5 of which are in California), where adult males defend territories, pups are born, and mating takes place. Non-reproductive animals congregate to rest at more than 200 haul-out sites where little or no breeding takes place. Rookeries and haul-out sites are continually used outside of the breeding season by Steller sea lions. The closest rookeries to San Francisco Bay are located at the Farallon Islands and Año Nuevo Island, located 26 and 50 miles away from the San Francisco Bay, respectively.

The first confirmed Steller sea lion observation was made in August of 1995. Since then, one adult male Steller sea lion (which may be the same individual, as it has aged and grown appropriately) has been observed at Pier 39 K Dock every year since. There have been about 30 observations of the Steller sea lion by MMC docents over that 10 year period. Apart from one observation of the Steller in March, all other observations of that individual at Pier 39 have been in the months of July-September.

If a Steller sea lion is observed at any time during dredging activities, all dredging work will cease until the Steller sea lion leaves the area through its own volition.

2. Fish

Other ESA-listed species that may be present in the project area are steelhead trout and Chinook salmon. BMMI will avoid impacts to these listed fish species by dredging only between June 1 and November 30.

VI. ENVIRONMENTAL CONSEQUENCES

The impact of Federal actions must be considered prior to implementation to determine whether the action will significantly affect the quality of the human environment. In this section, an analysis of the environmental impacts of issuing an IHA to BMMI at Pier 39 and the alternatives to that proposed action are presented.

A. Preferred Alternative (Issuance of IHA)

1. Impacts on Marine Mammals

The operation of the clamshell dredge at Pier 39 will generate acoustic and visual stimuli that may cause short-term behavioral disturbance to California sea lions and Pacific harbor seals hauled out at K dock (no dredging will occur if Steller sea lions are present). This disturbance from acoustic and visual stimuli is the principal means of marine mammal taking associated with these activities.

Sudden brief noises have been shown to elicit startle reactions in some pinnipeds. Novel looming visual stimuli may also induce similar startle reactions to pinnipeds. Alternately, a prolonged exposure to a weaker sound may also cause a pinniped to move away from the source of such stimuli. Daily engine starts in addition to movements of the dredge bucket and vessel may induce startled and/or flight behavior in marine mammals using K dock as a haul out. However, observations made over the last 13 years indicate that the sea lions at K Dock have quickly acclimated to many different types of unfamiliar intrusions, such as air shows immediately overhead, nearby fireworks, and dock-washing by the marina crew, none of which resulted in the animals leaving the floats.

The small, self-contained, clamshell dredge used for this activity may produce noise of a

sufficient level to harass marine mammals at K dock. Measured sound energy levels (SELs) of similar equipment ranged between 75-88 dBA (re 20 micro Pa) measured at 50 feet (the closest distance that the dredge unit will be to K dock) (Boeing, 2005). Results of an ongoing study at Vandenberg Air Force Base of the effects of rocket launches on pinnipeds indicate that the percentage of Pacific harbor seals leaving the haul-out increases with noise level up to an SEL of approximately 100 dBA. Although almost all seals will leave the haul-out when the SEL is 100 dB or above, recent data has shown that an increasing percentage of seals are now remaining at the haul-out when exposed to this SEL, and that those remaining are adults. Though harbor seals are more sensitive to audio stimuli than sea lions, these results indicate that animals are flushed at an SEL less than 100 dBA, and it is possible that marine mammals at K Dock may modify their behavior as a result of the dredge noise.

The MMPA classifies disruption in behavioral patterns of marine mammals as take by Level B harassment. If an animal receives noise stimuli at a level that exceeds ambient noise levels and the auditory threshold of the animal, especially if it is novel, there may be a behavioral response. Many factors contribute to the degree of behavioral modification, if any, including seasonality, group composition of the pinnipeds, type of activity they are engaged in and what noises they may be used to experiencing. Short-term reactions such as startle or alert reactions are unlikely to disrupt behavior patterns such as migrating, breeding, feeding and sheltering and would not likely cause serious injury to marine mammals.

If a startled reaction is accompanied by large-scale movements of marine mammals, such as stampedes into the water, the disruption may escalate into Level A harassment and could result in injury of individuals, especially if pups are present. However, due to the uniqueness of this particular haul-out area, the unlikely presence of pups, and the proposed shut-down procedures should pups be sighted, NMFS believes there is a very low likelihood of such injury occurring at the Pier 39 site. Specifically, the haul-out consists of many separate floating platforms that can hold up to about 25 marine mammals each. If disrupted to the point of flushing off the platforms, pinnipeds can quickly jump or roll into the water off the relatively small surface in any direction, avoiding a dangerous stampede-like situation that may occur at normal haul-out locations such as exposed rocks. Additionally, marine mammal pups use this haul-out very infrequently (approximately 10 pups were sighted at K Dock, in 1997 and 1998, during the El Nino), further reducing potential harm to the species. Lastly, if pinniped pups are sighted at K Dock, dredging operations will cease until the pups have left the area.

Estimated Levels of Incidental Take

The highest number of California sea lions ever counted at one time on the K Dock between June 1 and November 30 was 1244 individuals in August 2003. The average number of individuals counted at one time within the work window since 2000 is lowest in July (169) and highest in September (709). The effects of the proposed dredging activities are expected to be limited to Level B Harassment in the form of short-term startle responses and localized behavioral changes. Based on an average of 169 to 709 animals over the maximum of 14 days, NMFS estimates that California sea lions could be exposed to audio or visual stimulus likely to

cause harassment between 2360 and 9930 times. However, based on review of the Pier 39 observer logs maintained over the last 14 years, which indicate that sea lions may remain in the area and haul out for several days in a row at the K dock, NMFS estimates that between 1180 to 4965 animals will be harassed. The highest total number of harbor seals ever seen in one month between June 1 and November 30 was 3 in November of 1997. NMFS anticipates that no more than 3 Pacific harbor seals will be harassed by this activity.

2. Impacts on Marine Mammal Habitat or Subsistence Use

A temporary increase in turbidity is expected in the immediate vicinity of the area being dredged. However, this temporary modification of habitat is unlikely to cause any changes in behavior or otherwise adversely affect any marine mammals. The K dock haul-out is not used by any marine mammals for breeding, mating or molting, therefore, the dredging activities are not expected to have any impact on the reproduction of marine mammals. Also, the marine mammals do not generally feed in the dredging area, and, therefore, the increased turbidity is not expected to affect their feeding.

There is no subsistence use of marine mammals in California, and therefore no impacts are anticipated.

3. Impacts to Endangered Species

Steller Sea Lion

Though one Steller sea lion has infrequently been sighted at the K Dock, BMMI plans to cease dredging operations immediately if one is seen, and not begin dredging again until the animal has left the area. NMFS does not anticipate any impacts to Steller sea lions to result from the issuance of the IHA.

Fish

In the 1998 programmatic Biological Opinion addressing dredging in San Francisco Bay, NMFS established a June 1 to November 30 work window for dredging activities in the San Francisco Bay to avoid impacts to steelhead trout and Chinook salmon. BMMI proposes to dredge between June 1 and November 30, and therefore NMFS does not anticipate any impacts to ESA-listed fish.

4. Cumulative Impacts

Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions” (40 CFR §1508.7).

With the exception of regular ongoing boat and pedestrian traffic, NMFS is aware of no other activities occurring in the action area that may affect the marine mammal species addressed here. It is known that stress from long-term cumulative sound exposures can result in physiological effects on reproduction, metabolism, general health and disease resistance in marine mammals. These effects are not expected to be incurred, however, due to short duration of the proposed dredging activities. Impacts, if any, are expected to be limited to temporary displacement of marine mammals during dredging work.

B. No Action Alternative

If an IHA were not issued, any takes resulting from dredging activities at Pier 39 would be unauthorized and potentially in violation of the MMPA. If Pier 39 does not dredge the west marina the area will eventually fill with sediment to a point where boaters would no longer be able to safely access the docks due to inadequate water depths. If left undredged too long, the site could conceivably fill with sediment to a point where marine mammals would no longer be able to access K dock during low tides, potentially restricting their use of the dock as a haul-out site.

C. Issuance of IHA with Time-of-year Restrictions

If NMFS were to issue an IHA for the proposed dredging activities, but limit the work window to the months of June, July, or November, the nature of impacts to marine mammals would be identical to those of the preferred alternative, but the number of animals taken by Level B Harassment would likely be less due to lower numbers of California sea lions hauled out during those months. The average numbers of California sea lions counted during these months appear to be about half of those counted in August, September, or October of any year, though 927 animals were counted in June of 2001. The number of Pacific harbor seals potentially taken during this proposed work window would likely be the same as the preferred alternative.

The effects of issuing the IHA with time-of-year restrictions would be limited to Level B Harassment (short-term startle responses and localized behavioral changes) of between 1180 to 2437 California sea lions and 3 Pacific harbor seals. However, restricting dredging operations to two short work windows could potentially make it difficult for BMMI to complete the work in the authorized time slots should any mechanical issues, bad weather, or other unforeseen difficulties arise. If the dredging were delayed additional seasons, sediment could potentially accrete to the point that boats could not safely berth at I and J Docks, which would create a sizable negative economic impact on BMMI.

VII. MITIGATION, MONITORING and REPORTING

A. Mitigation

To minimize disturbance of marine mammals from visual and acoustic stimuli associated with the dredging activities, BMMI will use a small (relative to the range of sizes of equipment

that could accomplish the task) clamshell dredge that can easily target the specific areas to be dredged. The smaller equipment will also minimize the amount of turbidity resulting from the dredging activities. The dredge material will be immediately loaded on a barge and transported to a nearby terrestrial disposal site at Piers 96 and 98, which allows for a shorter project duration.

When not in use, the clamshell dredge and dredge barge will be parked as far as feasible from the K Dock. After starting engines in morning, clamshell dredge will be moved as slowly as possible to the area to be dredged and the dredge head lowered slowly and carefully into the water. As mentioned previously, if a Steller sea lion is spotted at any time during dredging operations, operations will cease until the animal has left the area.

In the highly unlikely event that any marine mammals are injured or killed as a result of the dredging operations, operations will cease immediately, BMMI will contact NMFS, and NMFS will review the circumstances and work with BMMI to determine whether modifications in the activities are appropriate and necessary.

B. Monitoring

The K dock haulout will be monitored periodically during dredging activities by two NMFS-approved observers according to the following schedule:

(1) During the week prior to the commencement of dredging activities, morning counts will be taken every morning at the same time. One afternoon count will be taken at approximately the same time the dredging is scheduled to stop in the following days.

(2) During the dredging operations:

(a) One count will be taken every morning before dredging work begins and every afternoon once operations cease.

(b) On the first day of dredging and on one other day near the end of dredging operations, monitors will be present all day (starting one hour before operations begin, and remaining until 2 hours after operations cease) and they will document specific behaviors as they relate to specific aspects of the dredging operations and other activities. An additional count will be conducted 2 hours after dredging operations cease. Rates of departure and arrival of animals from/to the haulout will be noted.

(3) Following completion of the dredging:

(a) Morning counts (taken at approximately same time as those taken previously (*See* (1))) will be made every day for a week.

(b) An afternoon count will be conducted the day after dredging ceases and on the last day of the post-dredging monitoring.

(4) During all monitoring periods the following data will be recorded: date, time, observer, tidal height, species present, maximum number of animals hauled out, number of adults and sub-adults, number of males and females (if possible), any observed disturbances to the animals, and

the number of animals disturbed (for example, if animals flushed, reports should include the number of animals that returned to the water, and those that remained hauled out). During periods of dredging a description of dredging activities will also occur (including location of dredge, i.e., between J and K Docks, or between I and J Docks).

C. Reporting

A draft report will be submitted to the NMFS Southwest Regional Administrator and the Office of Protected Resources within 90 days after project completion. A final report will be submitted within 30 days of receiving NMFS' comments, if any, on the draft report. The Report will contain, analyze, and summarize the information required under part B, above, as well as estimating the number of animals taken by Level B Harassment. BMMI will share data collected as a result of these monitoring activities with other interested parties, such as the Marine Mammal Center and other boat marinas.

VIII. CONCLUSION

As a result of this environmental review, NMFS has determined that the implementation of any of the three alternatives (the issuance of an IHA, the issuance of the IHA with time-of-year restrictions, or the denial of the permit) will not significantly affect the quality of the human environment. Additionally, the issuance of these authorizations is not controversial and will not set a precedent for future actions with significant effects. Accordingly, an environmental impact statement is not required.

IX. LITERATURE CITED

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Office of Protected Resources

Date

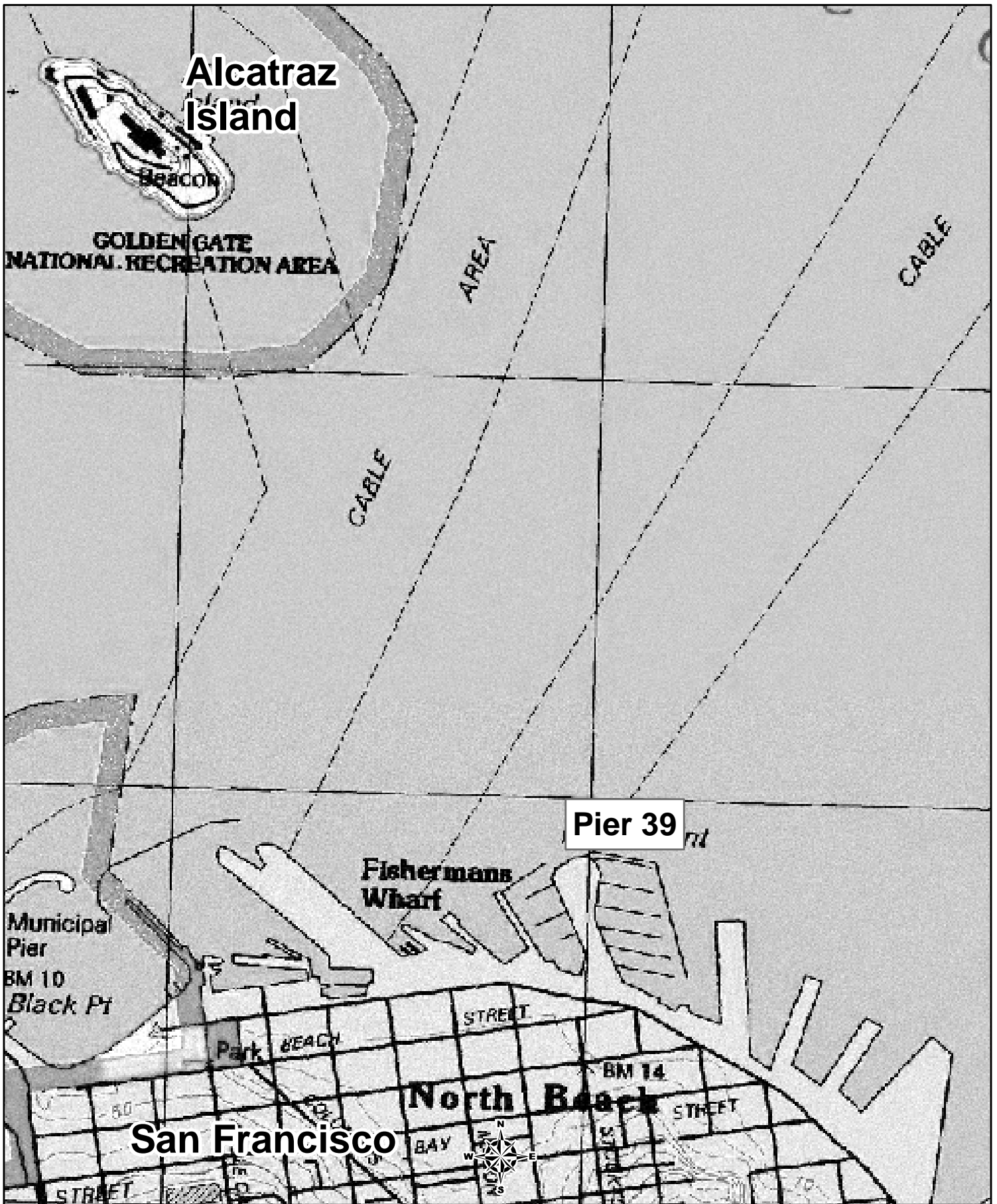


Figure 1.
Location Map of Pier 39

San Francisco, California

SCALE
1,000 500 0 1,000
Feet
1 inch equals 0.189394 miles
1:12,000



Date: 6/7/05
Map By: GwO
Basemap: USGS San Francisco Quad

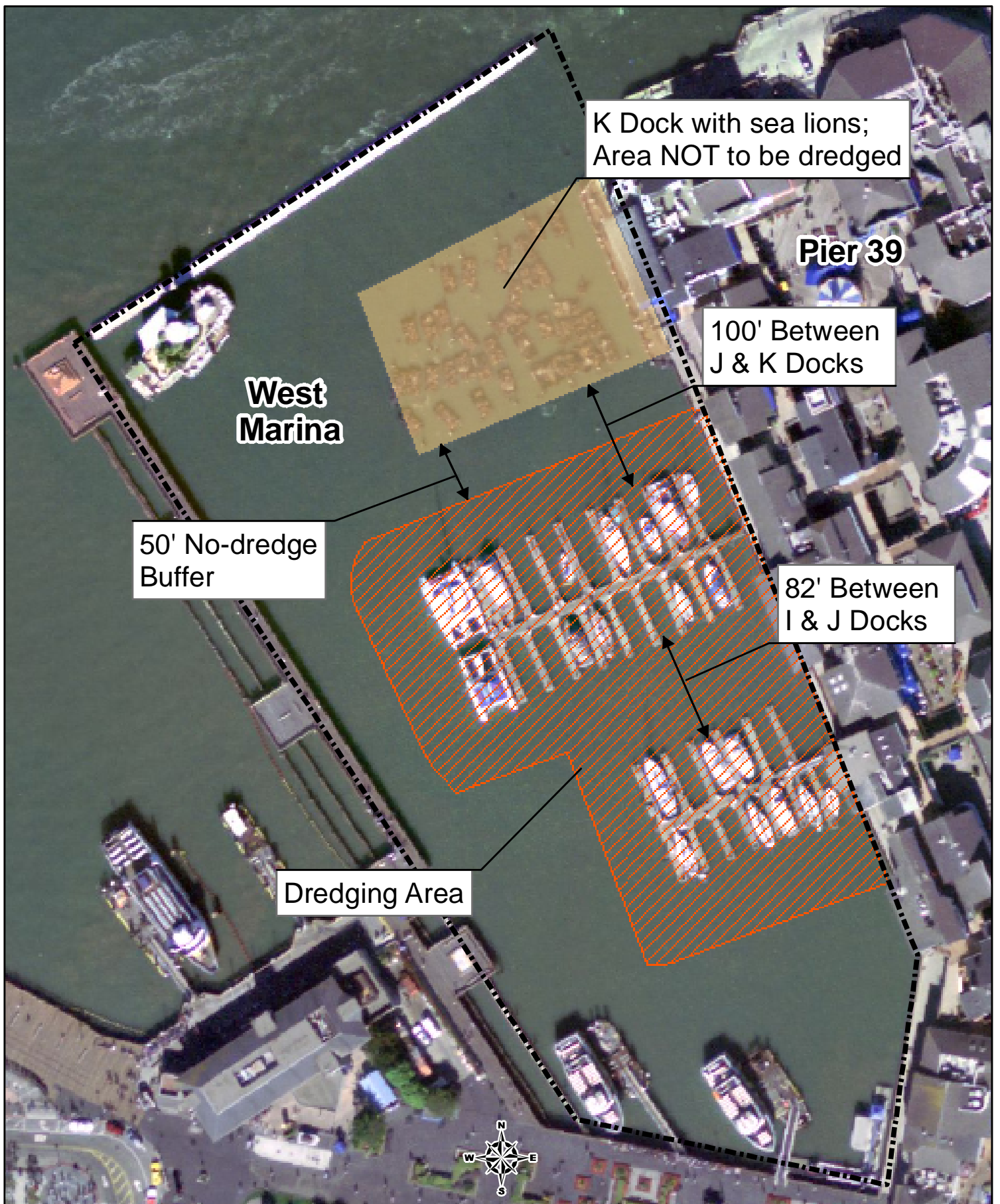
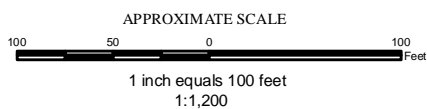


Figure 2.
Pier 39 West Marina
Dredge Area Diagram

San Francisco, California



Date: 6/7/05
 Map By: GwO



Figure 3.
Photograph showing California sea lions
hailed out on the Pier 39 "K" Dock

San Francisco, California