STATE OF CALIFORNIA -- THE RESOURCES AGENCY GRAY DAVIS, *Governor*

CALIFORNIA COASTAL COMMISSION

45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
CE AND TDD (415) 904-5200

W 11

RECORD PACKET COPY

MEMO

DATE: **April 22, 1999**

TO: **Coastal Commissioners And Interested Parties**

FROM: **Peter Douglas, Executive Director**
Mark Delaplaine, Federal Consistency Supervisor

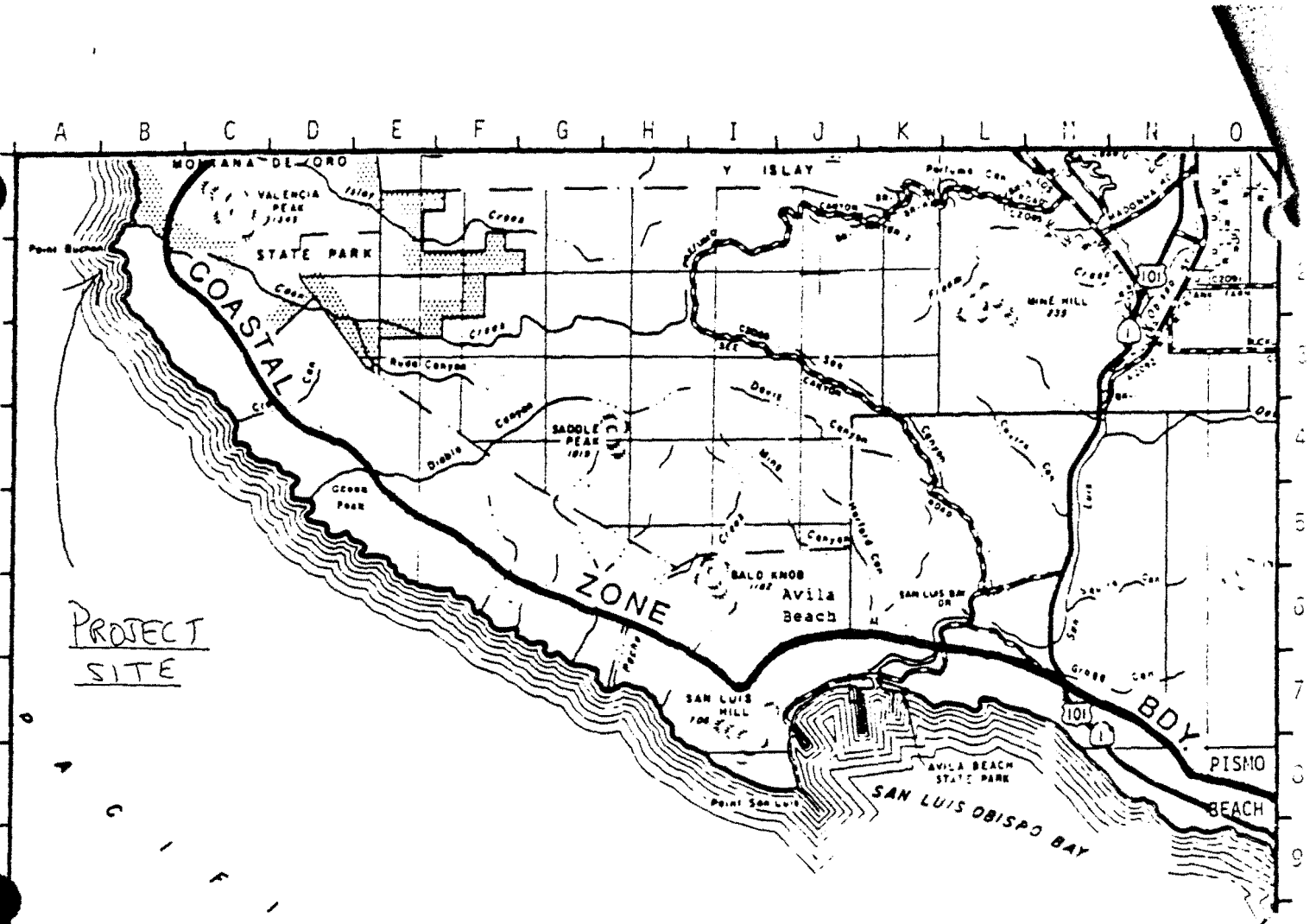
RE: **U.S. NAVY, Low-Frequency Active (LFA) Sonar Workshop**

In 1997 the Commission reviewed Navy consistency determinations for Phases I and II of a three-phase scientific research program investigating the potential marine resources effects of high-intensity, low-frequency sound, using the Navy's Surveillance Towed Array Sensor System Low Frequency Active ("SURTASS LFA") system. More commonly known as "LFA," this system is a sophisticated military sonar technology designed to actively detect and track submarines at longer ranges than conventional (higher frequency) active sonar systems. While LFA had been operating for a number of years, its activities were previously "classified," and only in the last few years has the public been aware of the program or its potential adverse effects on the marine environment. Because LFA has the potential to emit sounds well in excess of those generally considered able to cause significant adverse physiological effects on marine mammals and other species, the Navy agreed to prepare an EIS for the LFA program. To assist this effort, and to increase scientific knowledge of the effects of human-made, low-frequency sound on marine mammals, the Navy designed a three-phased program to study a variety of marine mammal behaviors, including: (1) feeding blue and fin whales off San Nicolas Island; (2) migrating gray whales off Big Sur; and (3) humpback breeding offshore of Hawaii.

The Commission concurred with the two of these research activities being performed in California waters, through its review of Navy consistency determinations CD-153-97 (Big Sur) and CD-95-97 (San Nicolas Island). The Navy has completed its pre-EIS

research and expects to release its EIS for the LFA program in the near future. The primary purpose of this workshop is for the Navy to provide information to the Commission and the public as to the results of these research efforts.

Attachments: Maps of Big Sur and San Nicolas Islands Research Areas, and an excerpt from a previous Commission report expressing concerns over the overall LFA program.



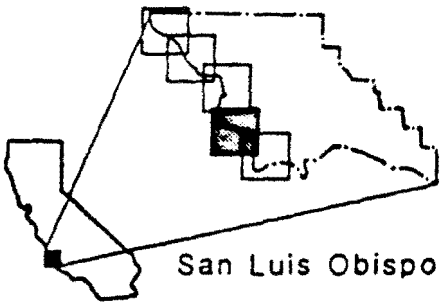


EXHIBIT NO. 1
APPLICATION NO.
CD-153-97

California Coastal Commission

LOCATION MAP

County of San Luis Obispo

ATTACHMENT 1

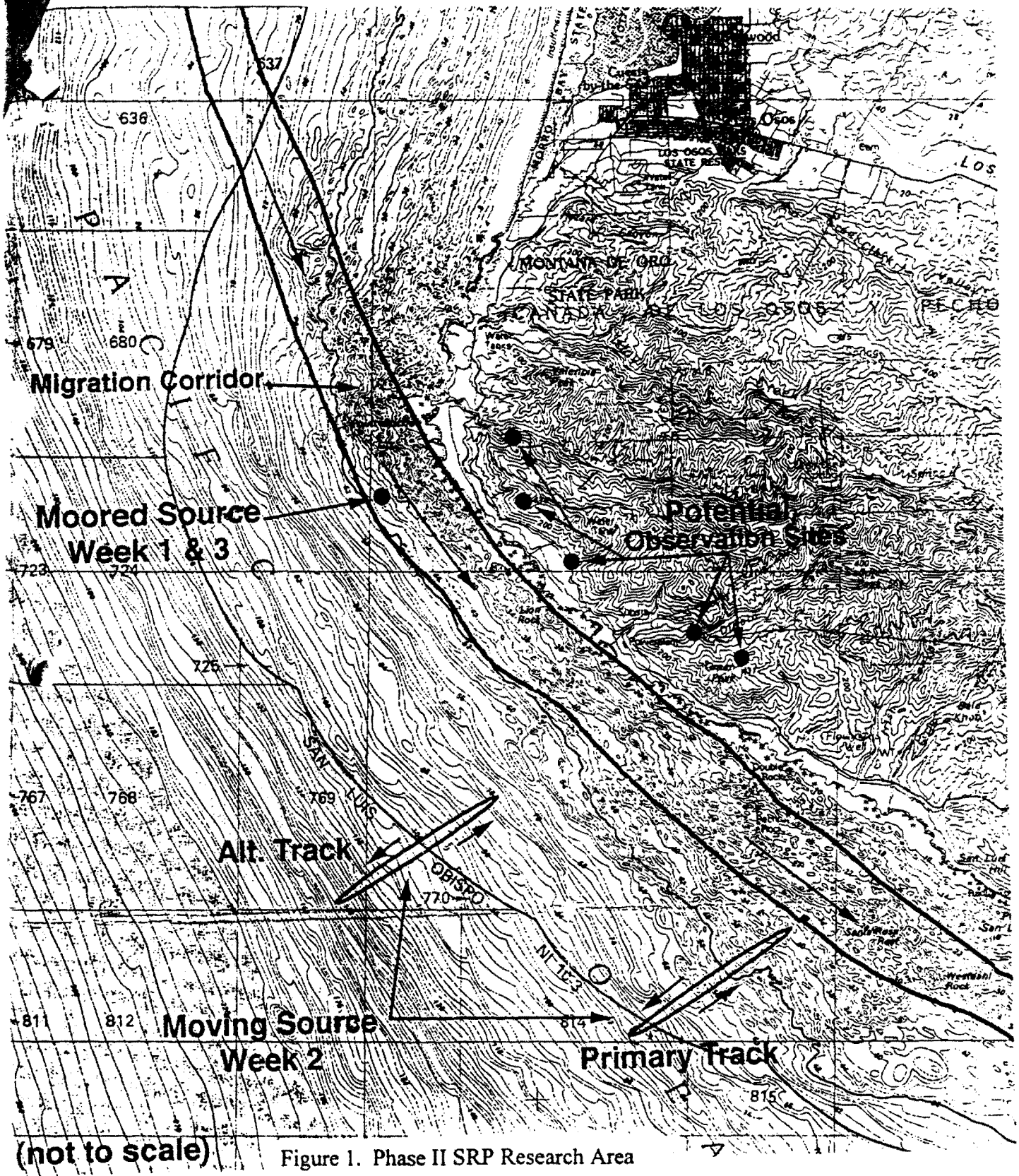


Figure 1. Phase II SRP Research Area

EXHIBIT NO. 2
APPLICATION NO.
CD-153-97

ATTACHMENT 2

ATTACHMENT 3

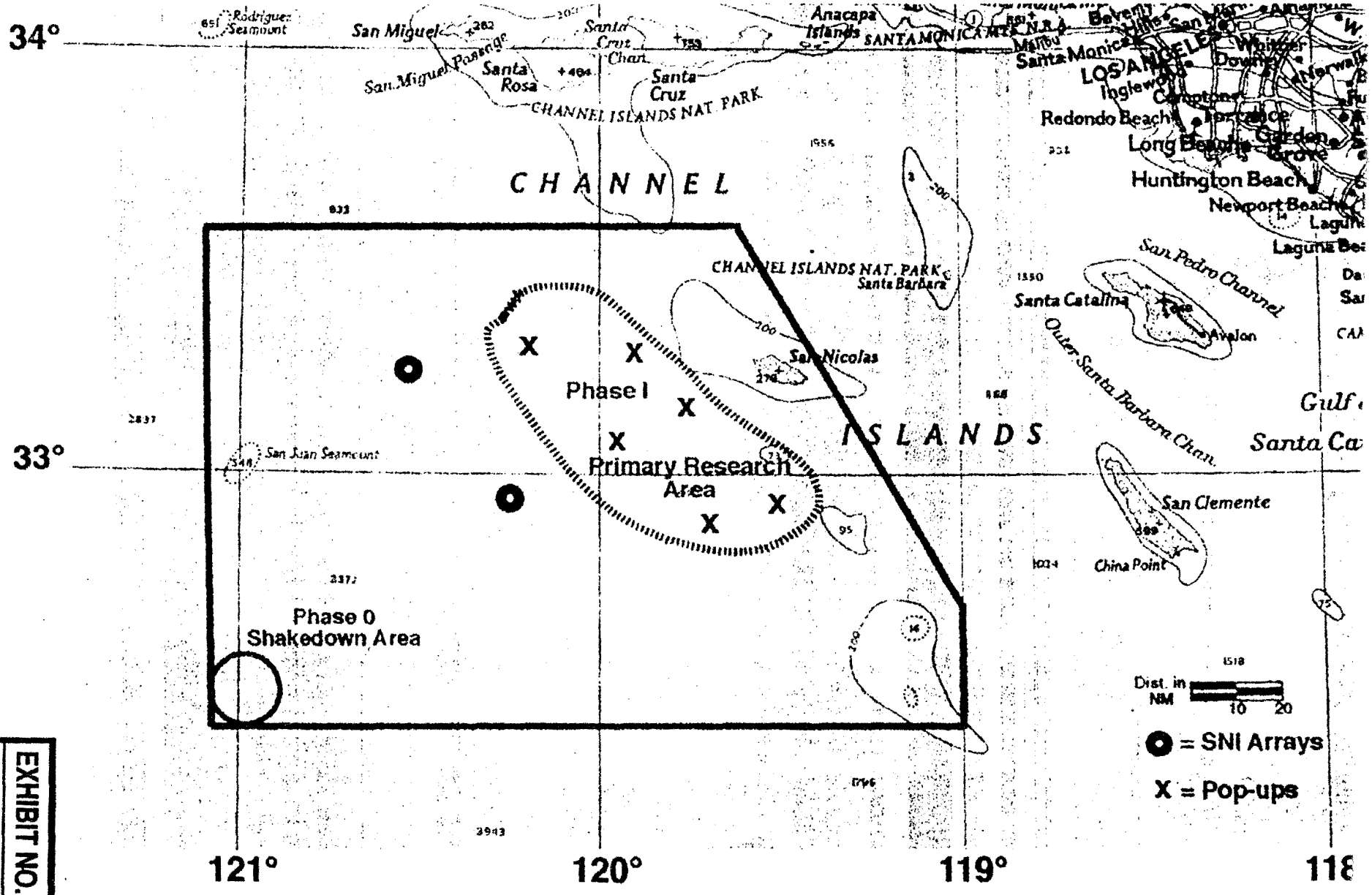


Figure 1. Chart of southern California region and the research area where shakedown/calibration and playback experiments will take place during Sept./Oct. 1997.

EXHIBIT NO. 1
APPLICATION NO. CD-95-95
Navy LFA

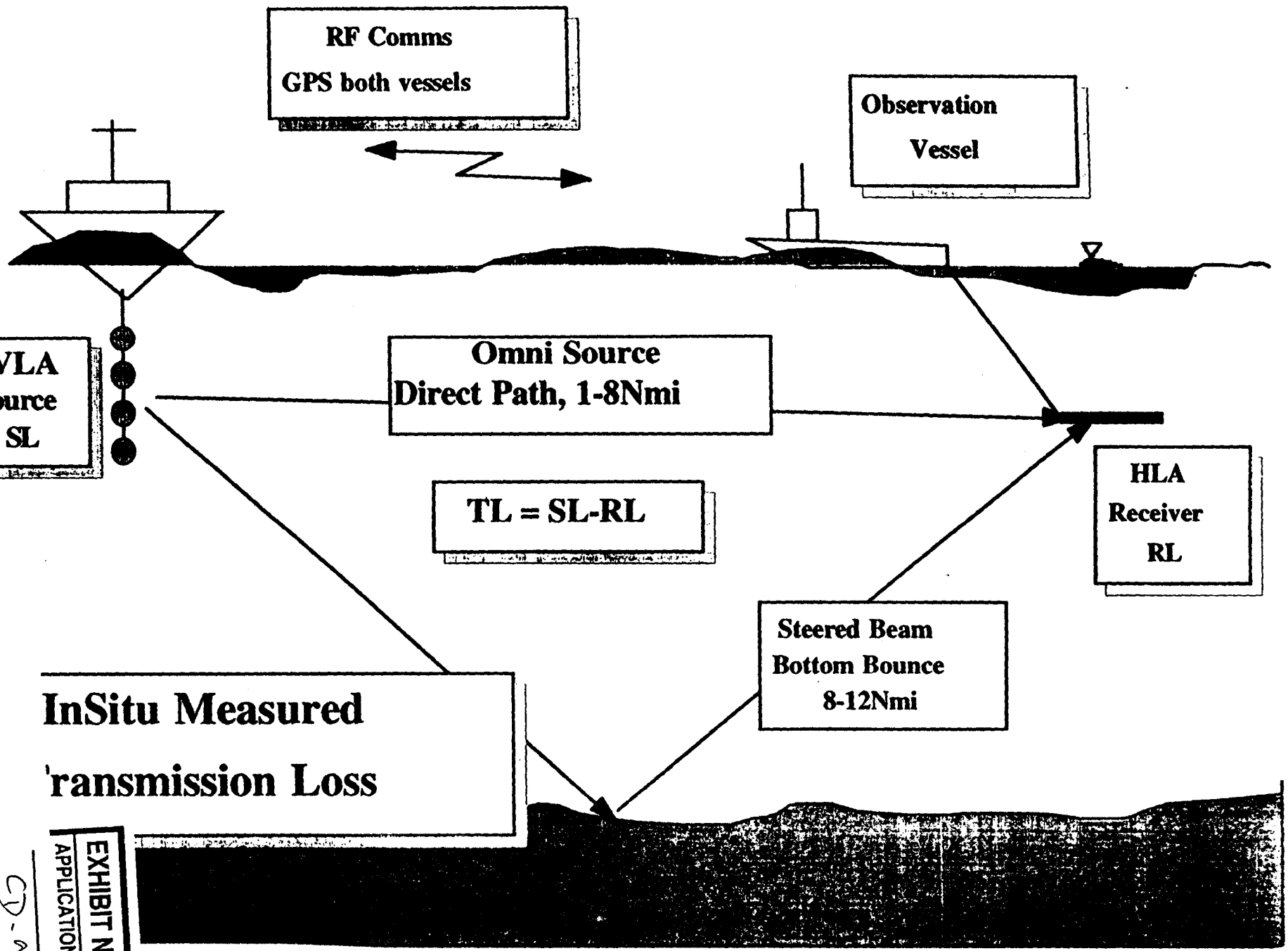


Figure 4. Schematic diagram of the two playback conditions (bottom-bounce and direct-path) used in the experiments.

ATTACHMENT 4

EXHIBIT NO. 2
APPLICATION NO.
CD-95-95

E OF CALIFORNIA – THE RESOURCES AGENCY PETE WILSON, *Governor*

ALIFORNIA COASTAL COMMISSION
FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
OICE AND TDD (415) 904-5200

EXHIBIT 10

Excerpts from Commission staff's August 28, 1996, letter to the Navy commenting on the Navy's decision to prepare an EIS for the overall LFA program:

We applaud the Navy for agreeing to examine the environmental effects of its program involving the development and deployment of a low-frequency, high-power density sonar system, which is designed to detect submarines throughout the world. At the same time, we wish to express grave concerns over the effects this program may have on marine resources and hope the Navy will undertake serious efforts to fully disclose the activity's effects. ...

Unlike the 195 dB (decibel) maximum ATOC[3] sound sources, where there was some uncertainty as to its effects, it appears that the LFA program poses a substantial risk of significant harm to the marine environment. The Navy's LFA sources are expected to be louder and of much greater duration than ATOC. Based on contractor reports (see "Low-Frequency, High-Power-Density, Active Sonars," Sea Technology, May 1995), past Navy LFA testing has been in the range of 235 dB, which is 40 dB louder than the ATOC source. This intensity is over ten thousand times louder than ATOC. This level is also louder than any natural sound emitted by any marine mammals, and it may well be loud enough to cause actual physiological damage to marine organisms. Moreover, we have reviewed reports that indicate, based on the Navy's own research, that such sounds can cause serious adverse effects on human divers (see "Exposure Guidelines for Navy Divers Exposed to Low-Frequency Active Sonar," Pestorius and Curley, May 14, 1996). ...

We are also, as we were with the ATOC program, greatly concerned over potential cumulative effects, including the combined effects from: (1) oil drilling and exploration, construction, and production activities, including well drilling, platform installation, platform removal, pipeline construction and repairs, and seismic surveys; (2) ongoing shipping activities; (3) other military activities (e.g., Navy "Ship Shock" detonations); and (4) scientific research. One of the few consensuses reached by all parties involved in the ATOC program was that the extent of human-introduced noises into the marine environment, worldwide, has increased exponentially in recent decades, with virtually no information available or ongoing monitoring to determine the ability of the marine environment to accommodate such noises. Given the worldwide scope of the LFA program, it is incumbent on the Navy to understand the effects of this program to the degree possible prior to implementing it on a regular basis.

---

[3] Scripps Institution of Oceanography, Acoustic Thermometry of Ocean Climate (
Marine Mammal Research Program (MMRP).

ATTACHMENT 5