V - DATA COLLECTION AND COMMUNICATION NETWORKS

5-01 HYDROMETEOROLOGICAL STATIONS

a. Facilities. Plates 5-1A, B show the precipitation, reservoir (water surface elevation), and stream gages in and near the watershed above Hansen Dam. These gages, along with their latitudes, longitudes, and elevations, are listed on plate 5-1B. Many of the stations consist of more than one type of gage, such as a recording and a non-recording precipitation gage.

b. Reporting. Hydrologic data from Hansen Dam and the upstream and downstream watersheds are observed and reported in 4 different ways as illustrated on plates 5-2 and 5-3.

(1) Manual. The Hansen Dam Tender observes precipitation, water surface elevation, and gate settings, and reports these to the District Office, as described in section 5-06.a.

(2) Recording Instruments. The recording instruments store data on paper tape, which is removed at predetermined intervals (once each month, October-April, plus once during the summer) and maintained on file by the District.

(3) Telemetry System. Hydrologic data measured at the dam and other gages are transmitted to the Los Angeles District Office (LAD) by the Los Angeles Telemetry System (LATS). These gages automatically transmit reports at predetermined 24-hour intervals. The event mode is the primary data sources for the telemetry system. As a gage registers an event, current data are radio-transmitted to a repeater from which it is sent via microwave to the LAD Office. Each gage is programmed to trigger whenever 0.04 inches of precipitation, or a 0.25-foot change in water surface elevation is recorded. All gages can also be interrogated at any time for current data via polled mode.

(4) ALERT System. There is also an event-reporting gage system throughout southern California sponsored by the National Weather Service. This system is referred to as the ALERT (Automatic Local Evaluation in Real Time) System. Access to this information can be obtained through the REPORT program on the Water Control Data System computer.

c. Maintenance. Each operating agency is responsible for the maintenance of its own gages and/or telemetry radio equipment. In many cases, the gage is owned by the U.S. Geological Survey, and the telemetry attachments are owned by the LAD or LACDPW. Plates 5-4 and 5-5 show stage/discharge relationships for Big Tujunga Creek below Hansen Dam.

5-02 WATER QUALITY

There are no water quality stations in the watershed above Hansen Dam.

5-03 SEDIMENT STATIONS

There are no sediment stations in the watershed above Hansen Dam. There are sediment ranges in Hansen Reservoir. Variations in minimum water level elevation (pls. 4-1A, B) have occurred because of rapid sedimentation and because the lake which existed inside the reservoir (until it completely filled in with sediment in the 1970's) was read with a staff gage extending lower than the invert elevation 990 ft. The high sedimentation rate and lake readings cause difficulty in relating area capacity curves from year to year within the reservoir.

5-04 RECORDING HYDROLOGIC DATA

Each agency maintains records of its own data (sec. 5-01 above). The NWS data are placed in archives at the National Climatic Center in Asheville, North Carolina. Precipitation and other data are published monthly by the National Climatic Center in Climatological Data and Hourly Precipitation Data.

The State of California, Department of Water Resources, publishes the data from the ALERT telemetry gage network on a monthly basis. The LACDPW maintains their recording and non-recording data bases, and furnishes data to other agencies upon request. The LAD maintains a data base from its recording and telemetry gages and provides selected data to the NWS for publication. Real Time Reports received from the ALERT gages and the LATS gages are stored in a database on the LAD Water Control Data System Computer. The LAD also enters data from its manual observations on various forms, which are maintained on file in the Reservoir Regulation Section of the LAD Office. These forms are discussed further in section 9-05 and illustrated in figures 9-1 through 9-7.

5-05 COMMUNICATION NETWORK

The LAD maintains a voice radio communication network for its entire operation activities. This routinely includes communications between the District Office and the various dam tenders, as well as vehicles in the field.

During periods of significant runoff, communication with the dam tenders becomes vital. The existing radio network, which has proven itself reliable, is backed up by a second radio network; both of these are backed up by the local telephone system.

Power at the District Office is backed up by an emergency generator system; and if all fails at the District Office, there is a complete radio system at the LAD Base Yard. The Base Yard is located a few miles east of the District Office.

5-06 COMMUNICATION WITH PROJECT

a. Regulating Office With Project Office. During the flood season (15 November through 15 April), a routine radio call is made at least once each weekday from the LAD District Office to the dam tender at Hansen Dam.

The Hansen Dam operator is also the operator for Lopez Dam. This "Morning Report" is usually made at 0810 hours, Monday through Friday. Other routine or non-routine radio or telephone calls are made as needed. Since Lopez Dam is an ungated facility, there are no telephone or electrical services at the site. Direct communication with the operator while he or she is at Lopez Dam is possible by calling the Mobile Radio (WUK 4121) assigned to this operator.

In the event that all communications with the LAD office, including the LAD Base Yard, should be interrupted, a set of "Standing Instructions to Project Operator for Water Control" has been compiled for Hansen Dam and a copy of these instructions is included in this manual as Exhibit A. The LAD organization chart and important phone numbers for reservoir operations decisions at Hansen and Lopez Dams are given on plate 9-1.

b. Between Project Office and Others. The Hansen Dam Tender is required to notify personnel at the Los Angeles County DWP spreading grounds downstream of Hansen Dam prior to making each gate change. The dam tender is instructed not to increase releases until confirmation is received that their diversion gate has been adjusted. In case of flood releases it is imperative that the diversion gate be raised prior to initiation of flood control releases.

c. Between Regulating Office and Others. Before and during the early stages of any reservoir impoundment, the LAD notifies other agencies and selected private interests of the impending rises in the reservoir water surface elevation and corresponding outflow. A list of the agencies to notify, with applicable office and home telephone numbers, is published annually in the LAD's Instructions for Reservoir Operations Center Personnel (the so-called "Orange Book") and is shown on plate 5-6. During major runoff events, the LAD Reservoir Operations Center (ROC) is in constant contact with the LACDPW Hydraulics Branch to fully coordinate the operations of both agencies. The LACDPW is directly tied into the LAD radio and telephone system. The LAD ROC is also in direct radio contact with channel observers dispatched to patrol the Los Angeles River during large floods. Channel observers are the eyes and ears of the ROC. It is their responsibility to observe the effects of floodwater and debris action and to keep the District Office informed so that proper decisions can be made relative to the operation of the reservoirs. Based on their report, decisions can also be made relative to sending crews out to repair vulnerable points in a channel or levee system, or to initiate evacuation of a surrounding neighborhood.

5-07 PROJECT REPORTING INSTRUCTIONS

During periods of water operations, communications between the LAD office and each affected dam tender are made on a frequent basis. Normal communications occur once each hour, and more frequent communications are sometimes required. If a gate change is required, the ROC staff broadcast the gate change instructions to the dam tender. When the gate change is completed, the dam tender calls back to the ROC with information on the change. The dam tender records pertinent information associated with the gate change on the form shown in figure 9-1. This report form is subsequently

submitted to the LAD Baseyard Office, Water Control Data Unit, Reservoir Regulation Section.

Other special instructions to dam tenders are conducted in a similar manner. This network of radio communications is also used by the dam tender to report any failure of machinery or other equipment, or any other unusual conditions at the dam.

5-08 WARNINGS

The responsibility for issuing all weather watches and warnings, and all flood and flash flood watches and warnings, rests with the NWS. Local emergency officials of cities and counties are responsible for issuing any other public safety warnings, including unusual overflows, evacuations, unsafe roads or bridges, and toxic spills. The LAD is responsible for providing these officials with up-to-date information, and forecasts where possible, of water rises within Hansen/Lopez Reservoirs and release rates into the channel downstream of Hansen Dam. The LAD ROC would notify the Emergency Management Branch, Los Angeles Police Department to initiate evacuation if a dam break is imminent.