

V - DATA COLLECTION AND COMMUNICATION NETWORKS

5-01. Hydrometeorological Stations

a. Facilities. Plate 5-01 is a map of gauging stations for precipitation, reservoir level, and streamflow in and immediately surrounding the watershed above Sepulveda Dam, plus the stream gauge stations on the Los Angeles River between Sepulveda Dam and the Pacific Ocean. These stations, along with their latitudes, longitudes, and elevations, are listed in table 5-01. Many of the stations consist of more than one type of gauge, such as a recording and a non recording precipitation gauge. Stream gauge rating curves for stations located between Sepulveda Dam and the Pacific Ocean are shown on plate 5-02. The relationship depicted between gauge height and discharge can provide useful information about downstream channel conditions (this is discussed further in section 8-09.c.; in addition rating tables associated with the rating curves are given in Exhibit F).

b. Reporting. Hydrologic data from Sepulveda Dam and the upstream and downstream watersheds are observed and reported in three different ways, as illustrated in table 5-02.

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

(4) ALERT System. There is also an even-recording gauge system throughout southern California sponsored by the National Weather Service. This system is referred to as the ALERT System (Automatic Local Evaluation in Real Time). 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 gauges.

5-02. Water Quality Stations

There are no water quality stations in the watershed above Sepulveda Reservoir. The U.S. Geological Survey operates a water quality station downstream at the gauge site known as "Los Angeles River at Willow Street Bridge, Long Beach, California."

5-03. Sediment Stations

There are no sediment stations (as such) in the watershed above Sepulveda Reservoir or along the Los Angeles River downstream of Sepulveda Dam. However, estimates of sediment production can be obtained from records at debris basins within the watershed.

5-04. Recording Hydrologic Data

Each agency maintains records of its own data (Section 5-01 above). The National Weather Service data are archived at the National Oceanic and Atmospheric Administration, National Climatic Data Center in Asheville, North Carolina. Precipitation and other data are published monthly by the National Climatic Data Center in Climatological Data and Hourly Precipitation Data.

The State of California, Department of Water Resources, published monthly data from the ALERT telemetry gauge network. The Ventura County Flood Control District and Los Angeles County Department of Public Works archive their recording and nonrecording data and furnish these data to other agencies upon request.

The U.S. Army Corps of Engineers maintains a file of data from its recording and telemetry gauges and provides selected data to the National Weather Service for publication. The Corps also enters data from its manual observations on various forms, which are maintained on file in the District. These are discussed further in Section 9-05 and illustrated in figures 9-01 through 9-07.

5-05. Communication Network

The U.S. Army Corps of Engineers maintains a voice radio communication network for its entire operations activities. This routinely includes communication between the District Office and the various dam tenders, as well as with vehicles in the field.

During periods of significant runoff, communication to and from the dam tenders becomes vital. The existing radio network, which has proven itself reliable, is backed up by the local telephone system.

Power at the District office, as well as at each dam is backed up by an emergency generator system; there is also a complete radio station at the District's Base Yard, a few miles east of the District Office in El Monte, California.

5-05. 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 District Office to each dam tender, including that of Sepulveda Dam. This Reservoir Operation Report (or "Morning Report") is usually made at 0800 hours, Monday through Friday (see fig 9-07). Other routine or nonroutine radio or telephone calls are made as needed (see also Section 5-07).

In the event that all communication with the District Office including the Base Yard, should be interrupted, a set of Standing Operating Instructions to Dam Tenders have been compiled for each dam. A copy of these instructions for Sepulveda Dam is included in Exhibit A of this manual.

b. Between Project Offices and Others. No routine communication exists between Sepulveda Dam and other agencies.

c. Between Regulating Office and Others. Before and during the various stages of any reservoir impoundment, the Corps of Engineers notifies offices of the City of Los Angeles, as well as selected private interests, of the impending rises in the reservoir water surface elevation and corresponding outflow. A list of agencies to notify, with applicable office and home telephone numbers, is published annually by the Corps of Engineers, Los Angeles District, in the Instructions for Reservoir Operations Center Personnel (hereinafter referred to as the "Orange Book"). During major runoff events, the Reservoir Operations Center of the Corps is in constant contact with the Hydraulics Division of Los Angeles County Department of Public Works in order to fully coordinate the operations of both agencies' reservoirs. The County is directly tied into the Corps of Engineers radio and telephone system. The Reservoir Operation Center is also in direct radio contact with channel observers dispatched to patrol the downstream channel during significant floods.

5-07. Project Reporting Instructions

During periods of water operations, communication between the District Office and each affected dam tender is made on a frequent basis, normally once each hour (at times more frequent communication may be required). If a gate change is required, the operating hydrologic engineers provide the radio operator at the District Office with the gate change instructions. These are broadcast to the dam tender. When the gate change is completed, the dam tender calls back to the District radio operator with information on the change. The radio operator then informs the engineer who initiated the change.

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

5-08. Warnings

The responsibility for issuing all weather watches a warning and all flood and flash flood watches and warnings rests with the National Weather Service. Local emergency officials of cities and counties are responsible for issuing any public warning regarding unusual overflows, evacuations, unsafe roads or bridges, toxic spills, etc. The U.S. Army Corps of Engineers is responsible for providing these official with up-to-date information, and forecast where possible, of water rises within Sepulveda Dam. If an uncontrolled spillway flow or dam break were imminent, the Reservoir Operations Center of the Corps would immediately notify the Los Angeles Police Department, Van Nuys Division (telephone no. (818) 989-8383), the Los Angeles County Sheriff, Disaster Communications Office (telephone no. (213) 946-7935), the California Office of Emergency Services-Headquarters, Sacramento (telephone no. (916) 427-4900), and the California Highway Patrol, 24 hour Communications Center (telephone no. 911). Upon completing the above notifications, contact would be made with the District Emergency Response Team. For other pertinent telephone numbers refer to the "Orange Book".

Table 5-01. Precipitation, Reservoir, and Stream Gauges in and near the Watershed Above Sepulveda Dam. July 1985.

Station Identification	Station Name	Latitude (N)	Longitude (W)	Elevation (ft., NGVD)	Type of Gauge(s)*
L-32, W-6162	Newhall-Soledad Division Headquarters	34°23'07"	118°31'54"	1243	NR
L-395	Olive View Sanitarium	34°19'29"	118°26'55"	1425	SR
V-234, T-622, T-623	Las Lajas Canyon	34°18'04"	118°41'24"	1150	SR
V-248	Simi Hills - Burro Flat	34°14'42"	118°42'32"	1750	SR, RR
V-187	Susana Knolls - County Fire Station	34°15'43"	118°40'08"	1085	SR
L-1173	Tapo Canyon	34°12'54"	118°42'41"	1525	SR, RR
L-775	Bell Canyon	34°11'40"	118°39'23"	895	RR
L-5	Calabasas	34°09'24"	118°38'14"	924	SR
L-1050	Old Topanga Canyon	34°06'28"	118°37'40"	1000	SR
L-1023	Santa Maria Creek-Speer	34°07'44"	118°34'42"	1415	SR
L-1147	El Caballero Country Club	34°08'52"	118°31'53"	1000	SR
L-292	Encino Reservoir	34°08'56"	118°30'57"	1075	SR, RR
L-17	Sepulveda Canyon - Mulholland Highway	34°07'51"	118°29'26"	1425	SR, RR
L-767	Handeville Canyon Road	34°06'24"	118°30'10"	1140	RR
L-237	Stone Canyon Reservoir	34°06'21"	118°27'13"	865	SR
L-762	Upper Stone Canyon	34°07'27"	118°27'15"	943	RR
L-465, C-SPDA, W-8092	Sepulveda Dam	34°09'48"	118°27'59"	725	NR, SR, RR, CR, NW, RW, CW, NG, RC, CG
L-15, W-9260	Van Nuys	34°10'48"	118°27'03"	695	SR
L-725	Birmingham Hospital	34°11'13"	118°30'17"	728	RR
L-21	Woodland Hills	34°10'14"	118°35'33"	875	SR
L-1051, W-1484	Canoga Park - Pierce College	34°10'51"	118°34'23"	800	SR
L-25	Northridge - Los Angeles Department of Water and Power	34°13'52"	118°32'28"	810	SR
L-1157	California State University Northridge	34°14'17"	118°31'48"	890	RR
L-29	Granada Hills	34°17'09"	118°30'59"	1280	SR
L-293	Van Norman Lake - Lower	34°17'18"	118°28'54"	1150	SR
L-30	Sylmar	34°18'37"	118°28'15"	1250	SR
L-1084	May Debris Basin	34°19'50"	118°25'45"	1680	SR
L-1213	Northridge Davis	34°15'15"	118°30'58"	950	SR
L-9	Sepulveda and Rayen	34°13'52"	118°28'04"	828	SR
L-24, W-1680	Chatsworth	34°15'20"	118°36'36"	948	SR
L-11	Orcutt Ranch	34°19'28"	118°34'14"	2850	SR
L-259	Chatsworth - Twin Lakes	34°16'43"	118°35'41"	1275	SR, RR
L-446, W-0115	Aliso Canyon - Oat Canyon	34°18'53"	118°33'25"	2367	SR, RR
L-284	Placerita Canyon	34°22'37"	118°28'43"	1485	SR
L-357	Van Norman Lake - Upper	34°18'49"	118°29'30"	1248	SR, RR
L-23	Chatsworth Reservoir	34°13'44"	118°37'18"	900	SR, RR
L-20	Girard Reservoir	34°09'07"	118°36'36"	986	SR
L-F57C-R	Los Angeles River above Arroyo Seco	34°04'55"	118°13'35"	330	RS, CS
L-F300-R, C-LART	Los Angeles River at Tujunga Avenue	34°08'28"	118°22'44"	550	RS, CS
L-F340-R	Los Angeles River below Firestone Boulevard	33°57'03"	118°19'22"	120	RS, CS, AS
L-F119-R	Los Angeles River below Wardlow Road	33°49'06"	118°12'17"	23	RS, CS, AS
L-E285-R	Burbank - Western Storm Drain above Los Angeles River	34°09'38"	118°18'13"	466	RS
T-320, T-321	Los Angeles River Below Sepulveda Dam	34°09'43"	118°27'56"	680	AR, AS

Legend:	Rain (Precipitation)	Reservoir Water Surface Elevation	Streamflow Water Surface Elevation	Gate Height
Nonstandard, Nonrecording (Staff)	NR	NW	NS	NG
Standard, Nonrecording	SR			
Recording (at site)	RR	RW	RS	RC
Corps Event-Reporting Telemetry	CR	CW	CS	CC
ALERT Event-Reporting Automatic Telemetry	AR	AW	AS	

For locations of these gauges, see Plate 5-01.

Table 5-02 Hydrologic Instrumentation of Sepulveda Dam

<u>Parameter</u>	<u>Gauge Type</u>	<u>Report Mode</u>	<u>Stored Record (period available)</u>	<u>Comments</u>
Water Surface Elevation	staff boards	Visual	Flood Control Basin Operation Report SPL 19 (1941-present)	
	Stevens A-71 recorder w/ quartz clock & D.R.*	Visual	paper strip charts (1941-present) punch tape (1974-present)	the paper strip chart is operated at 9.6"/day during the rainy season for better data definition; 2.4"/day in other periods
		Telemetry	telemetry data file	
Downstream Gauge Height	Digital Recorder *	Visual	Flood Control Basin Operation Report SPL 19 (1941-present)	paper punch tape stored via telemetry systems
		Telemetry	punch tape (1974-present) telemetry data file	
Outlet Gate Opening	gate opening indicator	Visual	Flood Control Basin Operation Report SPL 19 (1941-present)	
	Leupold & Stevens recorders			
Precipitation	tipping bucket gauge connected by magnetic sensor to D.R.*	Telemetry	Reservoir Operation Report SPL 424 (1941-present) punch tape (1974-present) telemetry data file	
			Belford recording gauge	None
	glass raintube	Visual	Rainfall Record SPL 31 (1941-present)	

* Digital Recorder - A device that converts gauge motion into coded digital information and records this periodically as a pattern of punch holes in paper tape.