

APPENDIX G

WEATHER TRACKING

This appendix discusses California meteorology and available weather tracking services in the state (i.e., forecasting services used by other stormwater monitoring programs).

California weather is generally characterized by a wet season (late fall through early spring) and an extended dry season (late spring through early fall). However, annual average rainfall ranges from less than five inches in desert areas of southeastern California to over 40 inches in northern coastal areas. Valley and coastal areas receive virtually all of their precipitation as rainfall and rarely receive snow, while mountainous areas typically experience abundant snowfall, particularly at higher elevations.

The vast majority of storm systems approach California from the Pacific Ocean. Storm tracks tend to follow the jet stream, a high altitude, high speed wind current which moves generally from west to east around the globe. The most common storm track for weather approaching California begins with low pressure systems that originate in the Gulf of Alaska, and follow the polar jet as it bends southeasterly towards the California coast. These systems tend to be relatively cold and produce snowfall at relatively low elevations. Also common are storm systems that form in the Pacific Ocean to the west/southwest of California, and follow the subtropical jet stream as it runs northeasterly towards California. These storms tend to be warmer, with a higher snow line.

Weather information is provided by the National Weather Service (NWS), a federal agency, and private weather forecasting contract services. National Weather Service is a primary source of weather information for public and private sector forecasters. NWS collects and processes satellite imagery and other atmospheric data, and runs the major weather forecast models. Models are available for near term (1-2 days), medium range (3-5 days) and long range forecasting. Model reliability and specificity decline with extended time periods. The model output can be used to indicate potential candidate monitoring events up to one week in advance; however, at that time interval the model predictions are useful only as a rough indication of the likelihood of a precipitation event.

The forecasters at NWS, as well as private contractor forecasters and news media (television) forecasters, use the model outputs together with other meteorological data (satellite and radar imagery, water vapor/atmospheric pressure/temperature data, etc.) to make their predictions. The NWS makes its forecast predictions available to the public. The NWS forecasts are produced every twelve hours (at approximately 9:00 a.m. and p.m.), along with a written discussion of model output and weather observations. These discussions are meant for a professional meteorological audience, and are highly abbreviated and cryptic, but often provide insight into the basis for the published forecast.

Private weather forecast services can be found by looking in the yellow pages of major city telephone books. Most private forecast services will provide semi-weekly written

forecasts, and 24-hour availability for telephone consultation. The following is a partial list of private California weather forecast services:

- Weather States Weather Service
- Weather Network
- Weather Watch

An example of a typical semi-weekly written forecast is presented as Figure G-1.

WEATHER NEWS
 SACRAMENTO METROPOLITAN AREA
 LARRY WALKER ASSOCIATES
 ISSUED THURSDAY MARCH 6, 1997 10:00am

SYNOPTIC SITUATION (Today, tonight, and tomorrow): A weak upper-level trough is passing over Northern California this morning. The front associated with this trough moved over the northern end of the state overnight dropping some light rain up along the North Coast. It moved east of the state around dawn and has dissipated south of 40N (Chico). Another weak trough will brush the North State tonight/early Friday. It will develop tomorrow afternoon in its wake.

3-5 DAY FORECAST (Sat-Wed): Most of the forecast models continue to agree on building a moderately strong upper-level ridge of high pressure over the Eastern Pacific this weekend which should result in fair weather and warmer than normal temperatures through Monday. There is one rogue model solution that suggests a trough passage on Saturday which is hard to completely ignore since this morning's satellite imagery shows a fairly healthy surge of moisture streaming across the forecast on the ridging solution. Computer problems with the NWS back in D.C. have delayed the latest medium range forecast model output this morning. The last three runs have consistently shown an impressive Eastern Pacific trough developing around the middle of next week. It's a little too early to be really confident, but chances are a significant storm system will move across Northern and Central California around Wednesday/Thursday next week.

SACRAMENTO AREA
 PRECIPITATION FORECAST:

	(WEST) DAVIS- SACRAMENTO	(EAST) CARMICHAEL- FOLSOM	POP	START TIME	STOP TIME
Today (9am-6pm)	None	None	0	--	--
Tonight (6pm-Midnight)	None	None	0	--	--
Friday	None	None	0	*	*
Saturday	Tr - .10	Tr - .10	10	--	--
Sunday	None	None	0	--	--
Monday	None	None	0	PM	*
Tuesday	Tr - .35	Tr - .35	40	*	*
Wednesday	.25 - .75	.30 - .85	60		

Precipitation amount, in inches, for a 12 or 24 hour period beginning and ending at noon or midnight as defined above. This amount represents the most likely quantity of rain expected during the defined period.

- POP - Probability of precipitation
- * - Precipitation which is showery or sporadic in nature or that is too far in the future to determine with any certainty.

FORECASTER: Walsh

Figure G-1. Typical Semi-Weekly Written Weather Forecast